

REToolKit Case Study

Bolivia ERTIC/IDTR: Decentralized Energy and Information and Communications Technologies for Rural Transformation Program

1. The project in short

The Bolivia ERTIC Adoptable Program Credit (*Decentralized Energy and Information and Communications Technologies for Rural Transformation Program*) starting 2004 will spend about \$60 million in three phases over ten years to increase rural access to Electrification and ICT, by using decentralized private-public business models and focusing on productive uses and training of suppliers and users. Output based subsidies for innovative service contracts aimed at local market development will be competitively awarded in several tenders. Extending Cellular Phone Coverage, TV and Radio to the same rural areas is expected to significantly increase the demand for and benefits from SHS.

2. Project Design and Status

The PV component of this program aims at servicing about 15,000 new users via SHS (in addition to schools, clinics and other social uses) during the initial Phase One (four years). A successful implementation of Phase One will trigger the subsequent Phases Two and Three of the overall Program, each Phase with comparable PV installation targets. The purpose of the Bolivia ERTIC Program is to expand and improve the delivery of infrastructure services through private-sector led mechanisms as a catalyst for the development of rural areas in Bolivia, with a focus on decentralized electricity services and information and communication technologies (ICT). Since the ultimate development impact of infrastructure services depends on the extent to which they can be harnessed for productive and social uses, the program will include investments in both infrastructure ‘hardware’ and complementary ‘software’, such as training and applications. For both the electricity and ICT sectors, the GOB has developed expansion strategies: PLABER for electricity and PRONTER for telecommunications. In order to reach the development objective, the Program will concentrate on the following activities: (i) Increasing access to rural infrastructure services in the project areas by using innovative, output-based, decentralized service delivery models with increased private-sector participation and community involvement; (ii) Defining and implementing improvements in policy, regulatory, and institutional frameworks, and strengthening of the respective key institutions; (iii) Identification and development of applications for productive and social use of electricity and ICT; (iv) Intensive promotion, including market development and training of local users, service providers and authorities; and (v) Intensive monitoring and evaluation programs.

The project went to Board in mid 2003 and became effective in December 2003, after two year preparation phase. All major phase one transactions were launched in 2004. Due to the recent political and social crisis, which has specially affected the rural areas, the challenging task of connecting the marginalized rural population to adequate infrastructure services has further risen on the Government’s agenda – at the same time country risk has increased, so that biddings will have to rely even more on business models built around local providers. The cell phone tender, the parallel tender for TV- and radio signal, as well as the PV tender will all be awarded in 2005.

3. Design Principles

The ten year, three-phase adaptable program credit financed by the World Bank will increase access in rural areas to electricity, information and communications services, by using

innovative, decentralized public-private business models and focusing on productive uses and training of suppliers and users. As part of this program, output-based aid (OBA) subsidies for innovative ‘Medium-Term Service Contracts’ (MSC) aimed at local market development for Solar Home System (SHS) will be competitively awarded in several tenders.

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Qualified local and international private sector players will be invited to participate. The program is flexible enough to allow for partnerships among PV equipment suppliers, local micro-credit organizations (known as IFIs), community organizations or NGOs as long as they comply with the pre-qualification criteria that will be defined in the bidding documents. Those that can show sound financial backing and the necessary array of skills which appear likely to enable the firm to operate the franchise within the OBA contract specification, will be permitted to bid.

The bidding variable will be the number of SHS installed (in 3 years) and serviced during 3-5 years after installation, at a fixed total subsidy per area (i.e. the winning bid would result in the lowest subsidy per unit). Bidders may bid for different areas.

The project will take place in the rural areas of four different States of Bolivia, which offer particularly good potential for PV: Oruro (10 municipalities), Potosí (16 municipalities), Cochabamba (9 municipalities) and Santa Cruz (11 municipalities). Within these areas, 81.969 households (equivalent to 317.046 people) live in dispersed zones, and 71.310 of these households do not have access to electricity services today. PV solutions are the most promising energy alternative for these households, as they are disseminated in an area of 143.249 km².

The basic tender principles are:

1. Service sustainability: Will be ensured by the MSC given that after the installation of the SFV equipment, operators will have to provide the following services and market development activities for an additional period of 3 years: access to financing possibilities, customer after sales services, annual household visits to train customers, development of a local micro-enterprise network that will sell spare parts, repair systems, and promotion of PV for productive and public uses in the area.
2. Capacity building of users and local spare part and repairs specialists: The winning bidder will have the obligation to develop the local market in his respective area via capacity building and monitoring tasks on the supply side (e.g. training local spare part and repairs specialists who will later be able to cater to the future spare parts market) and demand side (e.g. training users and promoting future sales of PV for domestic, productive and public uses). Hence, each winning bidder will reduce initial information barriers in his market area – an additional service that will be checked by random audits, just as the SHS installations.
3. Disbursement of Subsidies: The program will provide four different types of subsidies:
 - i) direct up-front OBA customer subsidies on the initial investment cost, paid to the supplier on the basis of actual installations;
 - ii) OBA service quality subsidies, paid to supplier against installation and service performance targets;
 - iii) OBA market development service subsidies, paid to the supplier against training of local technicians, yearly visits, users training, etc.; and
 - iv) indirect market development subsidies (aggressive overall promotion activities, support to the formulation of business development strategies, training and technical assistance).
4. Freedom to develop creative business models: To allow for cost reduction and service improvements through creative business models by all bidders - while assuring service quality over time - the bidding and service contracts will allow for a “well informed freedom of

choice” for service providers and users, by permitting for different ways of reaching the desired outputs (e.g. system sizes and payment options), while fixing minimum service standards.

5. Control and Supervision: Each MSC will be supervised by the Technical Control Entity (TCE) within the Program Coordination Unit (UCP) of the Ministry of Electricity and Alternative Energies. To protect customers’ rights, control that quality service standards are met, and market development activities and other services are carried out, the TCE will contract random audits with specialized firms.

6. Customer Financing: While allowing for a positive IRR for operators, the subsidies provided by the Project will close the affordability gap between rural users’ willingness to pay and SHS costs. Given that micro-credit services have been identified as a potential tool for expanding the number of potential users in the areas to be served, recommendations will be provided to bidders for offering different kinds of short and medium term financing to the users. Thus, the bidding documents will include a description of different payment options (e.g. maximum values for upfront cash, monthly payments, quarterly payments), each of which will be related to the system size chosen by the customer (between 20 and 100Wp) and to his ability and willingness to pay.

