

**DEVELOPING SUSTAINABLE
MARKETS FOR RURAL RENEWABLE
ENERGY SERVICES
IN
BRAZIL**

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The Role of Renewable Energies in Providing Clean Rural Energy Seminar, Lima, Peru

Renewable and Rural Energy Initiatives in Brazil

Rural Energy

- **Concessionaires**
- **Permissionaires**
- **Private interests**
- **Luz no Campo**
- **PRODEEM**
- **INCRA-PRONAF**
- **others**

Renewable Energy

- **PRODEEM**
- **NGO initiatives**
- **Private interests**
- **Luz no Campo**
- **Some Concessionaires**
- **others**

An Assessment of PRODEEM and the Brazil Action Plan

- Historical Review
- Key Elements of the Action Plan
- What to Improve -- Suggestions for Do's and Don'ts

Historical Review

- **Established formally by decree in December 1994**, to provide for the use of renewable energy for the electrification of communities and rural properties not served by a grid.
- **PRODEEM's mandate included distinct elements** for attending social and productive needs to promote regional development, reducing the use of diesel fuel in the Amazon and other areas, and complementing grid systems where the energy was not sufficient.

Challenges in Brazil

- **Large territorial area**
- **Considerable % of citizens below poverty level**
- **Large rural, low-income population**
- **Migration**
- **Insufficient local capacity**
- **Bureaucratic & politically vulnerable institutions**
- **Large infrastructure investment needs**
- **Lack of adequate social services**
- **Lack of information**
- **Lack of strong market tradition**
- **Need for public sector modernization & macro level reforms (economic, tax, financial, PSD)**

Initial PRODEEM Experience

- **Secured major institutional partners like Petrobras, Ministries of Health & Education, Foundations for integrated approach**
- **In phases based on equipment purchases, technology installed in growing number of communities**
- **Focus on PV technology**
- **Attended social uses**
- **Identified state-level program coordinators**
- **Acquired experience with ever larger international procurements of equipment**

Initial PRODEEM Results

- **Secured increasing budget allocations**
- **Growing web of formal institutional partners**
- **In-house staff supplemented**
- **Spread of activities to most states (increased focus on drought-stricken Northeast region)**
- **Maintained focus on PV (esp. for water pumping)**
- **At least 1 school, community center, health post attended/community (ave. 170 persons)**
- **Changed manner of solicitation**
- **High political profile - Brasil em Ação**

Emerging Problems

- **Limited flexibility in budget**
- **Institutional inadequacies** (planning, management process, project criteria, monitoring, evaluation, in-house capacity)
- **No efforts for local capacity-building**
- **Insignificant development impacts**
- **Negligible market movement / PSP**
- **Increasing time / contention in solicitations**
- **Insufficient commitment by vendors**
- **Limited technology transfer & options**
- **No economies of scale**

Search for Solutions via the Market

- **PRODEEM seeks IDB support through SMSE**
- **Action Plan endorsed by SE in August 1998**
- **Integrated sustainable development approach adopted -- inter-disciplinary efforts to build local RE markets**

Key Elements of the Action Plan

- **Focus on Sustainability**
 - **Private Sector Participation and Investment**
 - **Stimulate Market Development**
 - **Local Capacity Building**
 - **Stakeholder Involvement**
- **Secure Political Support**
 - **Endorsements, counterpart contributions**
 - **Policy initiatives**
 - **Regulatory incentives**
 - **Capacity Building**
- **Mobilize funding for Action Plan Elements**
- **Ensure accountability**

Action Plan:

BUILD INSTITUTIONAL CAPACITY

-] Make a Business Plan**
 - Undertake needs assessments, select team**
-] Provide for internal capacity-building & training programs for executing agencies**
 - Build capacity of other involved institutions**
-] Train decentralized agents**
-] Improve institutional processes (coordination, accords, contracting, procurement)**
-] Incorporate management tools for project & market development and oversight**

Action Plan:

DEVELOP SUSTAINABLE SERVICE MARKETS

- **Market studies, identifying best options for markets**
- **Select, apply, adjust, evaluate and replicate appropriate Business Models**
- **Involve the private sector in all market areas**
- **Stimulate demand (Information!)**
- **Stimulate and enable functioning of Market Agents (information-sharing as a key)**
- **Establish viable local financing mechanisms**
- **Motivate technology equipment providers to participate more pro-actively**

PROPOSED MARKET MANAGEMENT MODEL



**Institutional Partners
as Market Facilitators**

SUPPLY

**SERVICE
PROVIDERS**

Information Collection & Market Studies

Market Organization / Capacity Building

Technology Options / Applications

Dissemination & Marketing

Business Model for Service Providers

Financing & Project Implementation

DEMAND

**Aggregated
User**

Market:

Communities

Small Producers

Large Farms

Businesses

Residences

Monitoring, Evaluation, Feedback & Improvement Processes

Action Plan

COMPREHENSIVE TECHNOLOGY TRANSFER

- **Get vendors to help build market**
- **Promote partnerships that build local support structures**
- **Encourage public-private partnerships for developing market**

Financing Challenges

- **Unformed Markets w/very High Risks:**
 - **Lack of information about the market**
 - **Mainly low-income and dispersed population**
 - **Consumers without tradition of paying for services**
 - **Consumers' expectation of government provided services**
 - **End-users' ignorance of technology options and uses**
 - **Lack of local technical & management capacity**
 - **Inadequate experience of business service providers**



how to secure financing ... ?

FINANCING KEY: REDUCING THE RISKS

- **Gather & Disseminate Market Information**
- **Aggregate Markets (geographic & integrated uses)**
- **Organize Demand Side**
- **Support Growth of Productive Markets (using RE)**
- **Adequately Engage Supply Side**
- **Work Locally, work with the best**
- **Train Intensively: market/business concepts, technical; institutional capacity-building**

FINANCING KEY: Reducing the Risks #2

- **Involve Partners for All Development Elements**
- **Apply Business Models in Projects**
- **Establish Service Provider, Consumer & Market Criteria**
- **Design Local Financing Mechanism with Financial Sector specifically for market profile**
- **Diversify Fund Sponsors (shared risks)**
- **Use Close Monitoring, Evaluation & Feedback Tools**
- **Incorporate Dynamic Adjustment Process**

Action Plan Results

- **Business Plan for Transition to Market**
- **Formal 4-year PRODOC signed & Project Management Unit Set Up to Implement**
- **Wide Marketing Effort via Website & Regional Meetings (market stimulation)**
- **Phase I Project Evaluation**
- **Regional Market Managers Trained**

Action Plan Results, #2

Supporting Documents --

- Project Evaluation Methodology
- Standard Market Study
Guideline/Proposal
- New TC Proposals, Partner Accords
- Manual for Regional Market
Managers, etc.
- Improved & New Bidding Documents
- Marketing Materials, Data Base

What to Improve -- Suggestions for Do's and Don'ts

- **WHY?**
- **WHO?**
- **WHAT?**
- **WHERE?**
- **WHEN?**
- **HOW?**

TODAY --

- **ACTION PLAN ADOPTED BY PRIVATE SECTOR NGO**
- **IMPLEMENTING WITH PUBLIC-PRIVATE PARTNERS**
- **OPTIMAL LOCAL STAKEHOLDER INVOLVEMENT**
- **SIGNIFICANT LOCAL (PHYSICAL) PRESENCE**
- **STRONG BUSINESS MANAGEMENT PROFILE**
- **FINANCIAL EXPERTISE AND ACCESS**
- **INTER-SECTORIAL SUSTAINABLE DEVELOPMENT APPROACH**



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