Effective and innovative business models. What viability for privately led initiatives?

**IDCOL Solar Home System Program in Bangladesh**

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IDCOL Solar Home System Program

IDCOL is a state-owned development financial institution dedicated to promote/finance infrastructure and renewable energy projects in Bangladesh.

IDCOL Solar Home System Program:
- What is a Solar Home System?
- Program at a Glance
- Program Structure
- Fund Flow and Role of Partners
- Financing Structure
- Quality Control Mechanisms
- Challenges & Mitigations
What is a Solar Home System (SHS)?

- **CFL /LED Light**
- **Gel Battery**
- **DC-DC Converter** to run color television, fan, refrigerator etc.

<table>
<thead>
<tr>
<th>Capacity</th>
<th>Appliances</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>20Wp</td>
<td>Lamp: 2</td>
<td>4-5 hours</td>
</tr>
<tr>
<td></td>
<td>Mobile Charger: 1</td>
<td></td>
</tr>
<tr>
<td>50Wp</td>
<td>Lamp: 4</td>
<td>4-5 hours</td>
</tr>
<tr>
<td></td>
<td>B &amp; W TV: 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mobile Charger: 1</td>
<td></td>
</tr>
<tr>
<td>85Wp</td>
<td>Lamp: 9</td>
<td>4-5 hours</td>
</tr>
<tr>
<td></td>
<td>B &amp; W TV: 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mobile Charger: 1</td>
<td></td>
</tr>
</tbody>
</table>
IDC COL SHS Program – at a Glance

- Program Target: 4 million SHS by 2016
- Program Achievement: 1.66 million SHS by Sep 2012
- Number of Beneficiaries: 8.25 million people
- Power Generation: About 80 MW
- Fossil Fuel Saving: 165,000 ton/year
- Job Creation: 70,000 people
- IDC COL Investment: USD 350 million
Program Structure

Suppliers

Provides approval
Seeks approval

Supply Equipment
Pay for Equipment

Technical Standards Committee

PO Selection Committee

Applies
Select POs

Seek operation related solutions
Provides Solutions

Sells SHS & provide service
Pay down-payment & installment

NGO/PO

Provide grant & loan
Seeks grant & loan

IDCOL

Grant & soft term credit

Operations Committee

Household
Fund Flow and Role of Partners

**Multilateral Agencies**
- Provides grant and soft loans
- Provides technical assistance needed

**GoB**
- Provides grant and soft loan to IDCOL
- Provides policy support

**IDCOL**
- Provides grants to reduce SHS cost and for capacity building
- Provides soft loans
- Provides training, promo support
- Monitors implementation

**PO**
- Identify potential customers
- Installs SHS
- Extends micro-credit
- Provides after sales services

**Household**
- Maintain system
- Repay loan in monthly installments

**Debt Service**
- Provides grant and soft loan to IDCOL
- Provides policy support
- Provides grants to reduce SHS cost and for capacity building
- Provides soft loans
- Provides training, promo support
- Monitors implementation
- Identify potential customers
- Installs SHS
- Extends micro-credit
- Provides after sales services
- Maintain system
- Repay loan in monthly installments
## Mode of Financing: an Example

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Market Price of 50 Wp SHS</td>
<td>USD 400</td>
</tr>
<tr>
<td>(b) Buy-down Grant (Grant A)</td>
<td>USD 25</td>
</tr>
<tr>
<td>(c) System Price for Household [(b)-(a)]</td>
<td>USD 375</td>
</tr>
<tr>
<td>(d) Down Payment from Household to PO [15% of (c)]</td>
<td>USD 56</td>
</tr>
<tr>
<td>(e) Loan Payable from Household to PO [(c)-(d)]</td>
<td>USD 319</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Details</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loan Tenor</td>
<td>3 years</td>
</tr>
<tr>
<td>Interest Rate</td>
<td>12% p.a.</td>
</tr>
<tr>
<td>Monthly Installment Amount</td>
<td>USD 8.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>(f) IDCOL Refinance [80% of (e)]</td>
<td>USD 255</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Details</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loan Tenor</td>
<td>5~7 years</td>
</tr>
<tr>
<td>Interest Rate</td>
<td>6~9% p.a.</td>
</tr>
</tbody>
</table>
## A Sustainable Financing Structure

### Phased-out Subsidy:

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Capital Buy down Grant</td>
<td>$70</td>
<td>$55</td>
<td>$40</td>
<td>$40</td>
<td>$25</td>
<td>$25</td>
<td>$20</td>
</tr>
<tr>
<td>Institutional Development Grant</td>
<td>$20</td>
<td>$15</td>
<td>$10</td>
<td>$5</td>
<td>$3</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
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### Concessional to Semi-Commercial Credit:

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</tr>
</thead>
<tbody>
<tr>
<td>Loan Tenor</td>
<td>10 yrs</td>
<td>6-10 yrs</td>
<td>6-8 yrs</td>
<td>6-8 yrs</td>
<td>5-7 yrs</td>
<td>5-7 yrs</td>
<td>5-7 yrs</td>
</tr>
<tr>
<td>Interest Rate</td>
<td>6%</td>
<td>6%-8%</td>
<td>6%-8%</td>
<td>6%-8%</td>
<td>6%-9%</td>
<td>6%-9%</td>
<td>6%-9%</td>
</tr>
<tr>
<td>% of Loan Refinanced</td>
<td>80%</td>
<td>80%</td>
<td>80%</td>
<td>80%</td>
<td>70%-80%</td>
<td>60%</td>
<td>60%</td>
</tr>
</tbody>
</table>
Quality Control Mechanisms

**Physical Inspection**
- Physical inspection by technical inspectors
- Verification of collection efficiency by collection efficiency inspectors
- Independent technical and financial audit

**Training Programs**
- Training for trainers
- PO Staff / customer training
- Supplier consultation

**Call Centre**
- Lodges complain
  - IDCOL
  - Informs PO
  - Household
  - Takes remedial measure
  - PO
## Challenges & Mitigations

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Mitigation</th>
</tr>
</thead>
</table>
| Lack of awareness                   | − Promotional campaigns  
                                 | − Training programs                                                       |
| Untested business model             | − Social enterprise model with an ultimate goal of commercialization  
                                 | − Presence of multiple POs ensures healthy competition  
                                 | − Phased reduction nature of grant                                         |
| Lack of institutional capacity      | − Institutional development grant / Long-term concessionary credit  
                                 | − Staff training program                                                   |
| High cost of SHS equipment          | − Capital buy-down grant / Concessionary credit facility  
                                 | − Local support industry development                                       |
| Lack of quality assurance           | − Technical standard committee  
                                 | − Quality control mechanisms by IDCOL                                      |
| Lack of fiscal support              | − Tax holiday  
                                 | − Duty free import                                                        |
Replicability Potential: Prerequisites

Every market is unique and has its own needs. However the following helps:

- User access of private sector agencies/MFIs/NGOs
- Micro-credit outreach experience of the private sector agencies
- Adequate financial support from the donor agencies
- Availability of concessionary credit facility to the executing agencies
- An agency to monitor quality of products and services
- Development of local support industry
- Active support from the government i.e. fiscal benefits

IDCOL provided knowledge support to a number of African countries to develop similar programs in their respective countries.
Thank You

Q & A

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