An Overview of IDCOL

- A fully government owned financial institution
- Started operation in 1997
- Catalyzes private sector participation in infrastructure and renewable energy projects/programs
- Largest financier in private sector **infrastructure projects** in Bangladesh
- Market leader in **renewable energy** financing
IDC COL’s Renewable Energy Initiatives

- 4.1 Million SHS – 180 MWp
- 1,523 Solar Irrigation Pumps – 42 MWp
- 27 Solar Mini grid Projects – 5 MWp
- 63,000 Biogas Plants
- 3.4 million Improved Cook-stoves
- 55 MWp Solar Roof top Projects
- 2 Ground Mounted Solar Projects – 108 MW
- 300,000 Solar Street Lights
Uniqueness of IDCOL RE Initiatives

- Sustainable business models
- Ensures private sector engagement
- Market development and awareness
- Capacity development of stakeholders
- Quality control and monitoring services
- Tailored financing packages
Solar Home System Program (SHS)

- **System Size**: 10 Wp to 300 Wp
- **Installation**: 4.14 million
- **Beneficiaries**: 20 million (12% population)
- **Installed Capacity**: 180 MWp (approx.)
- **Fossil fuel saving**: 200,000 ton/yr. (USD 180 m)
SHS Program Implementation Structure

- **Suppliers**
  - Supplies Equipment
  - Pays for Equipment
  - Seeks approval from Technical Standards Committee

- **Technical Standards Committee**
  - Provides approval

- **Partner Organization (PO)**
  - Applies for grant & loan
  - Seeks grant & loan from IDCOL

- **IDCOL**
  - Provides grant & loan

- **PO Selection Committee**
  - Selects POs
  - Seeks operation related solutions

- **Operations Committee**
  - Provides Solutions
  - Seeks SHS & provide service

- **Household**
  - Sells SHS & provides service
  - Pay down-payment & installment

- **Donors**
  - Grant & soft term credit
  - Loan Repayment

- **Household**
  - Repays loan
### SHS - Challenges and Opportunities

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<th>Challenges</th>
<th>Opportunities</th>
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<tr>
<td>Lack of awareness among customers</td>
<td>– Promotional campaigns and customer training programs</td>
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<td>Establishing a sustainable business model</td>
<td>– Social enterprise model through NGOs/MFIs/Private entities</td>
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<td>– Presence of multiple POs ensures healthy competition</td>
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<td>Lack of institutional capacity</td>
<td>– Training and financial supports (long term concessionary credit) help create the capacity</td>
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<td>High cost of SHS equipment</td>
<td>– Capital buy-down grant</td>
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<td>– Development of local support industry</td>
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<td>Lack of quality assurance</td>
<td>– Quality control mechanisms i.e. selection of quality equipment and field level monitoring</td>
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<td>Grid expansion</td>
<td>– Coordination among government entities</td>
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Solar Irrigation Program (SIP)

**Installed**

1,523 pumps (42.08 MWp)

**Beneficiaries**

70,915 farmers

**Coverage/pump**

20 Hectare (Paddy)

**Average Panel Capacity/per pump**

42 kWp

**Average Pump Capacity**

18.5 kW

**Output/pump**

2 million Litres/day

**Targets to be achieved by 2030:**

**Installation**

10,000

**Emission Reduction**

10 mil tons of CO₂

**Project Life**
SIP Business Model

Suppliers —> TSC: Seeks system approval

TSC —> Suppliers: Approves pumps

Suppliers —> Sponsor: Supply Equipment

Sponsor —> Suppliers: Pay for Equipment

Sponsor —> IDCOL: Provides grant & loan

IDCOL —> Sponsor: Seeks grant & loan

Sponsor —> Farmers: Sells water

Farmers —> Sponsor: Pays irrigation charges

Development partners —> IDCOL: Grant & soft term credit
SIP - Challenges and Opportunities

**Challenges**

- A huge amount of excess energy remains unutilized.
- Market distortion through parallel programs with full or higher subsidy.
- Electric pumps affect financial viability. SIP can strongly compete with diesel pumps but not with electric pumps.
- Lack of central monitoring by sponsors

**Opportunities**

- Excess energy from SIP can be fed into national grid.
- Grant component ensures SIP offers competitive irrigation rates to farmers.
- The loan component incentivizes the sponsors to properly operate the pump.
- Efficient groundwater management.
- Approval process of irrigation sites by the Government.
Solar Mini-grid Projects

- **Average Size**: 100 kWp to 280 kWp
- **Location**: Isolated off-grid areas
- **Installation**: 26 projects
- **Beneficiaries**: 120,000+
- **Supply**: 24/7
SMG Business Model

- **Supplier/EPC**: Supplies and installs equipment, pays for equipment, seeks equipment approval, approves equipment.
- **TSC**: Provides grant & loan, approves equipment for grant & soft term credit.
- **Sponsor**: Sells electricity, pays electricity bills, seeks grant & loan.
- **IDCOL**: Provides grant & loan, seeks grant & loan, receives grant & soft term credit.
- **Development partners**: Connected with TSC and IDCOL.

- **Customers**: Sells electricity, pays electricity bills.
SMG - Challenges and Opportunities

Challenges

• Grid expansion in SMG areas
• Higher electricity tariff due to high initial outlay of the project

Opportunities

• Capable to provide 24/7 electricity services
• Grant component ensures SMG offers affordable tariff to consumers
• The loan component incentivizes the sponsors to properly operate the project
• Policy safeguard offered by the Government
Rooftop Solar Projects

- **65 MWp**
  - Approved Projects

- **157 MWp**
  - Projects in Pipeline

- **300 MWp**
  - Financing Target by 2025

4.1 million Ton Emission Reduction
Solar Rooftop Business Models

CAPEX Model

OPEX/RESCO Model
Solar Rooftop - Challenges and Opportunities

**Challenges**

- Cannot run without grid/generator
- Cost saving model rather than revenue earning
- Affects Government utilities’ revenue

**Opportunities**

- Cheaper than grid electricity
- Does not require land
- Bangladesh has potential of few thousand megawatts.
- Excess electricity can be exported by net metering.
Thank You!