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About Renewable Energy Ventures

- Wind
- Solar
- Biogas

- Energy Audits
- Energy Efficiency Investment Analysis

- Renewable Energy Project Development
- Energy Efficiency Projects

- Solanterns
- Consulting

- Micro – Entrepreneurs
- Access to energy for rural poor

- World Bank – CIC
- DANIDA
- PSP
Why Renewable Energy?

Renewable Energy Tech
• Environmentally friendly
• Suitable even for distributed generation
• Expensive to acquire cheap to run
• Limited generation costs fluctuations
• Energy independence
• Jobs

Fossil fuel Tech
• Environmentally hostile
• Optimal when centralized.
• Cheap to acquire, expensive over the life cycle.
• Volatile costs as a function of global commodity prices
• Subject to external forces
• Not so many.
Quick Illustration

Solar Lantern - $25
- Brighter
- Cheaper
- Healthier
- Safer
- Limited energy cost variability

Kerosene Lantern - $4
- Dimmer
- $100+ more expensive over a 3yr period.
- Indoor air pollutant
- Fire hazard
- Volatile costs.
Another example

<table>
<thead>
<tr>
<th>Small Hydro $1,000/kW</th>
<th>Diesel Generator $200/kW</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Plant life – 30+ yrs</td>
<td>• Plant life – 5 to 10yrs</td>
</tr>
<tr>
<td>• Per kWh cost of generation - $0.04 - $0.10</td>
<td>• Per kWh cost of generation - $0.20 to $0.40</td>
</tr>
<tr>
<td>• Environmentally friendly</td>
<td>• Environmentally hostile</td>
</tr>
<tr>
<td>• Predicable energy costs</td>
<td>• Volatile energy costs</td>
</tr>
<tr>
<td>• Energy Independence</td>
<td>• Subject to global factors</td>
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If the economics and benefits are clear, what are the barriers to scale up?
Challenges to deployment of Climate Technologies

• Limited risk/early stage capital
• Access to information
• Technical capacity
• Policy barriers
• Consumer awareness
• For large RE projects, access to the 30% equity required by debt investors
• Inexperienced project developers/sponsors
infoDev brings successful history of innovation in information and communication technology (ICT) for developing countries.

Rapid response team to react quickly to country needs.

A “mobile phone” technology solution for energy/climate?
A global network of Climate Innovation Centers (CICs) that address gaps to innovation and tech transfer

1. **30 CICs in Host Countries**
   - Physically or virtually hosted centers that provide a holistic portfolio of services and financing to enterprises in the climate tech space

   - Activities of Individual CICs
     - Early Stage Financing
     - Business Advisory Services
     - Market Linkage and Entry
     - Government Advisory
     - Information Access
     - Facilities

   - Activities of Global Network
     - Knowledge Platform
     - B2B Forums
     - Technology Transfer

2. **Global Network Linking CICs**
   - A global network linking locally driven CICs that delivers opportunities for collaboration, tech transfer and access to export markets

   - CIC pilots launching in Kenya and India, CIC business plans underway for other countries
Objectives of infoDev’s Climate Innovation Centers (CICs)

Climate Innovation Center (CIC) Network to help developing countries create competitive industries for innovative climate technology solutions that meet local needs.

Motivations:
• Countries want their private sector profitably involved in climate technologies
• Key part of the climate technology solution
• Numerous barriers facing them

Objectives:
• Climate change mitigation and adaptation through advanced technologies
• Economic development and job creation through competitive domestic industry
The First infoDev CIC

Kenya CIC breakdown of budget and activities

- 45% Proof-of-concept finance from USD 25-75k
- 20% Venture finance from USD 100-750k
- 15% Training, education, seminars
- 8% Market intelligence, technology databases
- 7% Government & policy advisory
- 5% Networking, B2B linkages, trade facilitation
Kenya CIC: Center hosted in Nairobi providing a hub for support and financing

Kenya CIC services and activities

**Finance**
- Risk Capital Fund
  - Proof of Concept
  - Seed Investments
- Investment Facilitation
  - Syndication
  - Working capital & consumer finance facilitation

**Advisory Services**
- Business Training
  - Basic & advanced courses
  - Seminars and Events
  - Local bank training program
- Technical Training
  - Product design, & tech courses
- Advisory Service Fund
  - Packaged services
  - TA Fund

**Enabling Environment**
- Policy Support
  - Advice & advocacy
  - International Collaboration
  - CIC Network
  - Brokering of tech transfer and joint R&D
  - Regional outreach and visibility

**Access to Information**
- Market Information
  - Market Intelligence Products
  - Competitive Landscape
- Technology Information
  - Tech quality & performance data
  - Database

**Access to Facilities**
- In-sourced
  - Computer Animated Design
  - Rapid 3D prototyping
  - Some office & networking space
- Outsourced
  - Testing and demo
  - Initial production

**Revenue Model: 70% of costs covered at year 10**

**CIC Budget USD15.2m: Years 1-5**

**Year 1**
- Implementation: $1.40M
- Facilities: $1.40M
- Investments: $1.40M
- Programs: $1.40M
- Staff: $1.40M

**Year 2**
- Implementation: $2.97M
- Facilities: $2.97M
- Investments: $2.97M
- Programs: $2.97M
- Staff: $2.97M

**Year 3**
- Implementation: $3.01M
- Facilities: $3.01M
- Investments: $3.01M
- Programs: $3.01M
- Staff: $3.01M

**Year 4**
- Implementation: $5.72M
- Facilities: $5.72M
- Investments: $5.72M
- Programs: $5.72M
- Staff: $5.72M

**Year 5**
- Implementation: $4.12M
- Facilities: $4.12M
- Investments: $4.12M
- Programs: $4.12M
- Staff: $4.12M

**Year 10**
- Implementation: $4,000,000
- Facilities: $4,000,000
- Investments: $4,000,000
- Programs: $4,000,000
- Staff: $4,000,000

**Year 11**
- Implementation: $5,000,000
- Facilities: $5,000,000
- Investments: $5,000,000
- Programs: $5,000,000
- Staff: $5,000,000

**Kenya CIC Network**
- Initial production
- Tech quality & performance data
- Packaged services
Financing & Investments

Capacity Building

Existing Programs: Carbon finance, CIF/CTF, GEF, IFI lending
Climate Innovation Centers
UNFCCC CTC & N

Pipeline development
Network participation

Conceptualization Early-growth Scale-up Full deployment
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