Climate Innovation Centers: Models, design and implementation

October 14, 2010

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Agenda

1. infoDev
2. Global CIC assessment
3. India CIC model
4. Kenya CIC model
5. Q&A
• **Experience:**
  - Work in over 80 developing countries
  - Managing multi-donor trust funds
  - Deploying targeted grants and TA
  - Links with a global community

• **Network:**
  - Convening stakeholders across sectors
  - Facilitating global collaboration
  - Cross fertilization of best practice
  - Emerging sectors: Agri, Cleantech, Mobile

• **Private sector driven approach:**
  - Leverage with local partners
  - 100% local ownership of projects
  - PPP models – partnering with private sector (e.g. infoDev-Nokia) to leverage experience

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**infoDev:**

**A Snapshot of infoDev’s track record**

- 300 incubators globally
  - Six Regional Networks
  - 80+ developing countries
  - 20,000+ SMEs
  - 220,000+ Jobs created
  - 90% success rate of incubators
  - 75% survival of SMEs after 3 yrs
  - ~1:1 leverage with local partners

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**Donors and partners**
Innovation Center Positioning

Climate Change ‘Building Blocks’

- Fast Start
- Carbon Markets
- REDD+

Technology

- Adaptation
- Green Fund
- Ag and soil carbon

Technology Journey

- Basic and Applied Research
- Development and demonstration
- Global Network of CIC’s
- Scale-up
- Carbon finance, project finance, existing programs
- Commercial
Building a Climate Innovation Center Network

**Objective**
- Establish 10 Climate Innovation Centers (CIC) globally.
- Scale up addition 20 centers
- Network total of 30 centers

**Impact**
- 30 networked CICs, 2,500 enterprises created, 240,000 jobs created, 12m tons of CO2 mitigated, 450MW in off-grid energy access, clean water access to 15m homes, 750 technology partnerships, 12,000 training programs delivered
CLIMATE INNOVATION CENTERS: A New Way to Foster Climate Technologies in the Developing World?

An infoDev publication in collaboration with UNIDO and DFID
Prepared by Ambuj Sagar and Bloomberg New Energy Finance
October 2010

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Indian Institute of Technology Delhi

David Strahan
Project manager
Bloomberg New Energy Finance
Developing Country Needs

- Developing countries will be facing a range of climate challenges relating to both mitigation and adaptation.
- At the same time, they have pressing developmental challenges in terms of providing various services and amenities (energy, water...)
  - Adequacy
  - Affordability
  - Efficiency
  - Modernity
- These challenges are inter-linked and technology can play a major role in addressing them while contributing to economic development.

Climate Innovation Centres A new way to foster climate technologies in the developing world? By Ambuj Sagar and Bloomberg NEF
Beyond “Tech Transfer”: Enhancing climate innovation

- Must focus on both availability and implementability of technologies – an “innovation” perspective

- Need technology innovation that is shaped by local needs and rooted in local context to meet developmental AND climate challenges

- Need technology development & diffusion capacity in developing countries in order to meet these challenges effectively and efficiently in the long term
The Innovation Process: A Quick Overview

Climate Innovation Centres A new way to foster climate technologies in the developing world? By Ambuj Sagar and Bloomberg NEF
<table>
<thead>
<tr>
<th>Key Journeys for Successful Innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Technology Journey</strong></td>
</tr>
<tr>
<td>Basic and Applied Research</td>
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<td>Development and demonstration</td>
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<td>Scale-up</td>
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<tr>
<td>Commercial</td>
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<tr>
<td><strong>Company Journey</strong></td>
</tr>
<tr>
<td>Individual</td>
</tr>
<tr>
<td>Start-up</td>
</tr>
<tr>
<td>Growth</td>
</tr>
<tr>
<td>Established</td>
</tr>
<tr>
<td><strong>Finance Journey</strong></td>
</tr>
<tr>
<td>Government/Charity</td>
</tr>
<tr>
<td>Venture Financing</td>
</tr>
<tr>
<td>Credit (Debt) Markets</td>
</tr>
<tr>
<td>Public Equity Markets</td>
</tr>
<tr>
<td><strong>Market Journey</strong></td>
</tr>
<tr>
<td>Technology push</td>
</tr>
<tr>
<td>Benefit quantified</td>
</tr>
<tr>
<td>Market Pull</td>
</tr>
<tr>
<td>Feedback</td>
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<tr>
<td><strong>Policy Journey</strong></td>
</tr>
<tr>
<td>General Regulation</td>
</tr>
<tr>
<td>Sector Regulation</td>
</tr>
<tr>
<td>Technology Specific Regulation</td>
</tr>
<tr>
<td>Comprehensive Framework</td>
</tr>
</tbody>
</table>

Climate Innovation Centres - A new way to foster climate technologies in the developing world? By Ambuj Sagar and Bloomberg NEF
Climate Innovation Centers

A new institutional approach to enhance and accelerate technology innovation that:

- is informed and driven by both development and climate needs of developing countries,
- is shaped by local context,
- takes a broad, yet nuanced, view of innovation and innovation needs,
- complements and strengthen local activities and capabilities,
- leverages local and global experience and knowledge -- not mere “technical consultancies” but true innovation cooperation.
- Literature review
- Survey of existing capacity
- Case studies:
  - Baoding Industrial Zone - China
  - CIETEC – Brazil
  - New Ventures India
  - UNIDO-UNEP CP Programme
  - CGIAR
- Financial analysis – BNEF database
- Gaps and barriers analysis
- Conclusions and recommendations
- Designing the CIC
Survey Methodology

Step 1
- 550 organizations in 68 countries
- Not R&D, but facilitators
- Filtered by activity
- Minimum 25% climate focus

Step 2
- 67 relevant organizations
- Filtered by 50%+ climate focus

Result
- 25 most relevant organizations
What Kind of Organizations?

67 relevant organizations – 25% climate focus

- Incubator: 42
- Technology development and diffusion centre: 8
- Technology seed fund: 6
- Centre of excellence: 4
- Technology accelerator: 3
- Climate innovation centre: 2
- Finance facilitator: 2

25 most relevant organizations – 50%+ climate focus

- Incubator: 10
- Technology development and diffusion centre: 4
- Technology seed fund: 2
- Centre of excellence: 2
- Technology accelerator: 2
- Climate innovation centre: 4
- Finance facilitator: 2

Climate Innovation Centres A new way to foster climate technologies in the developing world? By Ambuj Sagar and Bloomberg NEF
Climate Innovation Centres  A new way to foster climate technologies in the developing world? By Ambuj Sagar and Bloomberg NEF
Where is the existing capacity?

Institutions that Facilitate Climate Innovation

KEY
- Incubator
- Diffusion centre
- Seed fund
- Centre of excellence
- Accelerator
- Climate innovation centre
- Finance facilitator

Centres predominantly or wholly focussed on climate technology
Centres partially focussed on climate technology

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Climate Innovation Centres  A new way to foster climate technologies in the developing world? By Ambuj Sagar and Bloomberg NEF
## Functional gaps

<table>
<thead>
<tr>
<th>Areas</th>
<th>Gaps</th>
</tr>
</thead>
</table>
| Technology | • Few centers provide technical assistance in product development (40% in South Asia and Middle East)  
• Lack of understanding of climate technologies |
| Company  | • Few centers support earliest stages of innovation                  |
| Market   | • Few centers provide market information to incubatees 3/14 in South Asia, Middle East)       |
| Policy   | • Few centers engage in policy development                           |
| Finance  | • Most centers cannot provide access to private capital 75% of 67 centers)  
• bureaucracy in applications for public funding  
• lack of innovative financing options  
• inadequate financial infrastructure  
• shortage of private investment |
Paying for Innovation

Interplay between stage of innovation, source and size of funding, and investment risk

Climate Innovation Centres: A new way to foster climate technologies in the developing world? By Ambuj Sagar and Bloomberg NEF
Activities undertaken by ClCs

- **TECHNOLOGY**: Help improve the technology development process to ensure the availability of technologies for local markets.
- **COMPANY**: Support entrepreneurial as well as existing ventures to succeed in the business of climate innovation.
- **FINANCE**: Facilitate the expansion of financing options for climate innovation by both helping deepen the pool of funds available and enhance access for firms.
- **MARKETS**: Promote demand through creation and strengthening of markets for climate technologies.
- **POLICY/REGULATION**: Ensure that the policy/regulatory framework supports climate innovation.
- **COORDINATION**: Streamline the innovation process through bird's-eye view of various activities.
What is a Climate Innovation Center?

A ‘one-stop-shop’ to foster climate innovation

Climate Innovation Centres: A new way to foster climate technologies in the developing world? By Ambuj Sagar and Bloomberg NEF
Key design features

- Innovation gaps will differ from technology to technology and country to country (but gaps do exist on multiple journeys)
  - Cannot use “one shoe fits all” approach – flexibility will be key
- Local and intl. engagement with a range of orgns./experts
  - Technology and product development (start-ups, large firms, academia, government labs)
  - Business and market development (incubation, policy devt.)
  - Finance (banks, VCs)
  - Domain knowledge experts (policy, regulations, tech analysts)
  - Policy makers
- Focus on scalable opportunities and development co-benefits
- CICs as new institutions – mostly facilitators/ coordinators; supporting, not competing, with existing actors
Tailoring design for local contexts

**FIGURE 3: CIC FOCUS BY COUNTRY SIZE AND LEVEL OF DEVELOPMENT**

<table>
<thead>
<tr>
<th>Country Attributes</th>
<th>LARGE/MEDIUM POPULATION COUNTRIES</th>
<th>LOW POPULATION COUNTRIES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HIGH GDP</td>
<td>MEDIUM/LOW GDP</td>
</tr>
<tr>
<td></td>
<td>High/Medium HDI</td>
<td>Low HDI</td>
</tr>
<tr>
<td>Scale of Centre</td>
<td>National</td>
<td>National</td>
</tr>
<tr>
<td></td>
<td>Regional</td>
<td>Regional</td>
</tr>
<tr>
<td>Scope of Centre</td>
<td>Main technology thrust</td>
<td>Technologies for basic energy needs; mitigation; adaptation</td>
</tr>
<tr>
<td></td>
<td>Innovation process</td>
<td>Technologies for basic energy needs; adaptation</td>
</tr>
<tr>
<td></td>
<td>Emphasis on deployment process and strategies</td>
<td>Mitigation; adaptation</td>
</tr>
<tr>
<td>Need for international resources (finance, human)</td>
<td>Selective</td>
<td>High</td>
</tr>
</tbody>
</table>
Conclusions

• Technology offers great potential in simultaneously meeting climate and development challenges – but realizing potential of technology requires attention to full innovation cycle

• Limited innovation capabilities in developing countries – need institutional mechanisms to overcome limitations

• CICs – meant to enhance and accelerate innovation to meet these challenges

• Short-term and long-term gains on climate mitigation and adaptation; meeting human needs; sustainable development; and job creation – and building capacity.
Comments/Suggestions?

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david@davidstrahan.com
1. Feasibility process
2. Gaps vs Solutions
3. India CIC business model
4. Financial plan
5. Implementation & Oversight
6. Mission, objectives, impact
Feasibility study process: India

Stakeholder identification and outreach

Sector mapping: Main issues

Workshop 1: Brainstorming and networking

Follow up: Quantitative analysis

Workshop 2: Model design and working groups

Develop proposal with key stakeholders and government endorsement

Implementation

Stakeholders
Technology prioritization

Gaps analysis

Workshops

Surveys

Model design

Proposal

The following are available to Cleantech SMEs, entrepreneurs and innovators:

- Initial/startup risk capital
- Facilities to build prototypes
- Information access/data bases on technology

Model design
Proposal
Mapping Market Gaps to Center Business Model

**Gaps**
- Technology
- Finance
- Company
- Market
- Regulatory

**Solutions**
- Access to Finance
- Advisory Services
- Enabling Environment
- Access to Information
- Access to Facilities

**Case Study: Company Gap**

**Husk Power Systems, India: Founded 2007 – Rural rice husk waste-to-electricity systems.**

HPS owns and operates 35-100 kW “mini power-plants” that use discarded rice husks to deliver electricity to off-grid villages in the Indian “Rice Belt”. The company is at a critical stage of growth with an aim to expand from 30 to 2,000 systems sold within 4-5 years in order for the company to successfully scale and achieve a tangible impact on rural electrification. A key barrier to market expansion for Husk has been the limited access to mentoring and business advisory support, which is often inaccessible to start-up companies in India; a gap that a CIC in India will be well positioned to fulfill.
The India CIC: Business Model

**Finance**
- Risk Capital Fund
  - Proof of Concept (10-50k)
  - Pre-Seed Investments (50-250k)
  - Seed Investments (250-750k)
- Investment Facilitation
  - Syndication
  - Database
  - Working Capital Facilitation

**Capacity Building**
- Mentor Training
  - Train the Trainer Program
- Education and Events
  - Courses & Toolkits
  - Seminars and Events
- Advisory Services
  - Specialized Service Fund
  - Packaged Services
  - Accreditation

**Ecosystem Development**
- R&D Collaboration
- Technology Brokering
- Technology Sourcing
- Applied R&D Competition
- International CIC network

**Markets and Policy**
- Analytical Products
- Market and Product Information
- Policy Advocacy

**Innovation Cell Network**
- City 1 (or Technology 1)
  - Access to Advisory Services
    - Professional Services
    - Incubators
    - Mentors
  - Access to Facilities
    - Laboratories
    - Testing and Demonstration Facilities
    - Incubators
  - Access to Industry
    - Technology Partnerships
    - Demonstration Projects
    - Manufacturing
- City 2 (or Technology 2)
- City 3 (or Technology 3)
55% of the total 4 year budget is allocated to direct investments into high impact technologies.

Center Sustainability: Almost 70% self-sustaining after 10 years (business as usual scenario).

Other opportunities for revenue:
- Carbon Credits
- Advisory services
- Sponsorship
- Tailored Training
- Brokered technology transfer
- Consulting work
Implementation and Oversight

Implementation activities:
- Outstanding governance issues
- Investment governance and structuring
- Staffing review
- Partners
- Locations
- Technology priorities

Oversight Board

Management Team

Finance
Capacity Building
Ecosystem Development

Innovation Cell Network

Partnership Development Manager (city 1)
Partnership Development Manager (city 2)
Partnership Development Manager (city 3)

Gol Partners
Private Sector Partners
Investment Committee
The India CIC: Mission, Objectives and Impact

Mission

To create, leverage and aggregate a holistic portfolio of programs, services and financing in India that bridge local market gaps and advance the commercialization of climate technologies.

Objectives

1. Provision of access to flexible finance at a number of strategic levels
2. Capacity building of new and existing enterprises
3. Facilitation of interaction of innovative ideas, technologies and enterprises with large industries
4. Collaboration and support to an ecosystem that aggregates existing players
5. Creation of regional clusters of innovation to leverage existing resources and infrastructure.

Impact

Environmental
- Mitigating up to 500,000 tons of CO2
- Providing over 1b kiloliters of clean water to over 2m Indians
- Providing increased energy access of up to 345m kWh
- Improving agricultural efficiency in over 75,000 farms

Financial
- Providing finance, technical assistance & mentoring to over 70 Indian climate ventures
- Achieve a 100% leverage ratio with the private sector for 30% of the investment funds
- Achieve an overall 50% leverage of the entire cost of the center

Social
- Generating over 1000 direct jobs and 3800 indirect jobs
- Generating over 1100 jobs for women and 1200 jobs for youth
- Creating over 36,000 jobs over 10 years at cost of less than USD 900 per job
1. Stakeholders
2. Survey results
3. Tech prioritization
4. Gaps analysis
5. Kenya CIC business model
6. Partners
7. Next steps
8. Questions
Stakeholder Distribution

Breakdown of Kenyan Stakeholders

<table>
<thead>
<tr>
<th>Sector</th>
<th>Examples of stakeholders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entrepreneurs</td>
<td>Winafrique, Toughstuff, Craftskillz, Goodlite Energy Systems, Que Energy Ltd.</td>
</tr>
<tr>
<td>Academia</td>
<td>Nairobi University, Kenyatta University, Moi University, Jomo Kenyatta University</td>
</tr>
<tr>
<td>Finance</td>
<td>Acumen Fund, Grofin, EnCo, Faulu, Realways Capital, Responsibility, EACP</td>
</tr>
<tr>
<td>Incubator</td>
<td>IFC’s SSC, Strathmore, KIRDI</td>
</tr>
<tr>
<td>NGO/International Orgs</td>
<td>GTZ, Clinton Foundation, Practical Action, AfD, DANIDA, DfID,</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>KIRDI, AFREPEN, ACTS</td>
</tr>
<tr>
<td>Government/Policy</td>
<td>Ministries of: Industrialization, Environment, Energy, Agriculture</td>
</tr>
</tbody>
</table>
**Center Functions and Priorities: 1 Low, 5 High**

- Be networked with other Centers globally
- Provide incubation services for start-up enterprises
- Provide facilities for technology testing and demonstration
- Provide ‘proof of concept’ grants for prototype development
- Facilitate technology transfer from developed countries
- Provide entrepreneur training courses
- Provide loan programs
- Also allow industry to use facilities/services

**The following are available to climate innovators in Kenya**

- Initial/start up/risk capital
- Facilities to build prototypes
- Information access/databases on technology
Technology Priorities of CIC

Evaluation Criteria

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<tr>
<th>TR</th>
<th>MD</th>
<th>AF</th>
<th>RS</th>
<th>BM</th>
<th>IR</th>
<th>EC</th>
<th>WF</th>
<th>PO</th>
<th>EI</th>
<th>GI</th>
<th>SI</th>
<th>AT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology Readiness</td>
<td>Market Demand</td>
<td>Availability of Funding</td>
<td>Clear, Ready Stakeholders</td>
<td>Business Model</td>
<td>Leverage of Indigenous Resources</td>
<td>Entrepreneurial Capacity</td>
<td>Workforce</td>
<td>Policy</td>
<td>Economic Impact</td>
<td>GHG Impact</td>
<td>Social Impact</td>
<td>Already on Track</td>
</tr>
</tbody>
</table>

Stakeholder Feedback

Priority 1: Off-grid Technologies

Main technologies: Solar PV, CPV, Bio-Gas, Biomass, Wind.
Example business models: Off-grid/distributed solar PV, off-grid/distributed CPV, distributed bio-gas, distributed biomass generated power, off-grid/ distributed wind kW, Distributed energy from hybrid power systems (e.g Wind-solar-diesel hybrid systems).

Score: 4.1/5.0

Prioritized Technologies

1. Off-grid Technologies
2. Water
3. Micro-hydro
4. Tech for adaptation
5. Agriculture
6. Bio-energy
Country: Kenya  
Company: Craftskillz  
Entrepreneur: Simon Mwachiro  
Clean Technology: Small Wind  
Current capacity: 10 to 20 turbines a year.  
Employees: Between 3-20

### Gaps Analysis: Interviewing local companies

<table>
<thead>
<tr>
<th>Barriers</th>
<th>Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of risk capital</td>
<td>Center could offer start up risk funding. Simon is looking for approx USD100k</td>
</tr>
<tr>
<td>Standardization</td>
<td>Center could offer standards for various tech</td>
</tr>
<tr>
<td>Policy</td>
<td>Center could act as an “Industry Association”</td>
</tr>
<tr>
<td>Business support</td>
<td>Center could provide business training, market data etc.</td>
</tr>
<tr>
<td>Equipment and tools</td>
<td>Center could provide facilities where entrepreneurs could prototype their innovations and produce initial products for proving the market.</td>
</tr>
</tbody>
</table>
### The Kenya CIC: Business Model

<table>
<thead>
<tr>
<th>Finance</th>
<th>Advisory Services</th>
<th>Enabling Ecosystem</th>
<th>Access to Information</th>
<th>Access to Facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk Capital Fund</td>
<td>Business Training</td>
<td>Policy Support</td>
<td>Market Information</td>
<td>In-sourced</td>
</tr>
<tr>
<td>Proof of Concept</td>
<td>Basic &amp; advanced courses</td>
<td>Advice and advocacy</td>
<td>Market Intelligence Products</td>
<td>Computer Animated Design</td>
</tr>
<tr>
<td>Seed Investments</td>
<td>Seminars and Events</td>
<td>International Collaboration</td>
<td>Competitive Landscape</td>
<td>Rapid 3D prototyping</td>
</tr>
<tr>
<td>Investment Facilitation</td>
<td>Local bank training program</td>
<td>CIC Network</td>
<td>Technology Information</td>
<td>Office &amp; networking space</td>
</tr>
<tr>
<td>Syndication</td>
<td>Technical Training</td>
<td>Brokering of tech transfer and joint R&amp;D</td>
<td>Finance Information</td>
<td>Outsourced</td>
</tr>
<tr>
<td>Working capital &amp; consumer finance facilitation</td>
<td>Advisory Service Fund</td>
<td>Center Visibility</td>
<td>Database</td>
<td>Testing and demo</td>
</tr>
<tr>
<td></td>
<td>Packaged services</td>
<td></td>
<td></td>
<td>Initial production</td>
</tr>
<tr>
<td></td>
<td>TA Fund</td>
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</tr>
</tbody>
</table>

- **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 Ecosystem:**
  - Policy Support
  - Advice and advocacy
  - International Collaboration
  - CIC Network
  - Brokering of tech transfer and joint R&D
  - Center Visibility

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

- **Access to Facilities:**
  - In-sourced
  - Computer Animated Design
  - Rapid 3D prototyping
  - Office & networking space
  - Outsourced
  - Testing and demo
  - Initial production
### Partners: Leveraging existing resources

<table>
<thead>
<tr>
<th>Partner</th>
<th>Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>KIRDI</td>
<td>Facilities for entrepreneurs, access to equipment, potential for commercialization of KIRDI's IP, Training of entrepreneurs by KIRDI's technical staff</td>
</tr>
<tr>
<td>Ministry of Industrialization</td>
<td>Utilize MOI space</td>
</tr>
<tr>
<td>Finance Industry</td>
<td>Investment in CIC companies, mentorship of CIC companies, training etc.</td>
</tr>
<tr>
<td>Ministry of Finance</td>
<td>CIC could provide TA to the Green Energy Fund companies in agreement with the GEF board.</td>
</tr>
<tr>
<td>GVEP/CIPA/Lighting Africa</td>
<td>Given our complementary work in the clean technologies, these organizations would send over companies that are too early stage for them to the CIC and the CIC could potentially refer SMEs better suited to the partners to them.</td>
</tr>
<tr>
<td>Facility owners</td>
<td>Entrepreneurs at the CIC can utilize equipment at partner organizations to develop prototypes.</td>
</tr>
</tbody>
</table>
Next steps

• Finalizing DANIDA commitment to resource Kenya CIC

• Working with DFID and other development agencies to co-fund program.

• Building local and international partnerships to assist in implementation
Questions

• Are we addressing a market gap with CICs?

• Do the models address local needs?
  – Leveraging local and international partners

• How do we take these models to take scare?
Appendix

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Impact, M&E and Risks

Environmental
- Mitigating up to 500,000 tons of CO2
- Providing over 1b kiloliters of clean water to over 2m Indians
- Providing increased energy access of up to 345m kWh, contributing to an installed capacity of over 30MW reaching an additional 60,000 people
- Improving agricultural efficiency in over 75,000 farms

Financial
- Providing finance, technical assistance & mentoring to over 70 Indian climate technologists, innovators and new ventures
- Achieve a 100% leverage ratio with the private sector for 30% of the investment funds
- Achieve an overall 50% leverage of the entire cost of the center via local cash and in-kind contributions

Social
- Generating over 1000 direct jobs and 3800 indirect jobs at a cost of less than USD 3,300 per job
- Generating over 1100 jobs for women and 1200 jobs for youth
- Creating over 36,000 jobs over 10 years at cost of less than USD 900 per job

M&E
- Internal databases and data collection
- Yearly annual report
- Focus groups and stakeholder follow-up
- Surveys and other quantitative measurements where possible
- Third party M&E assessments

Risk Management
- **Center Risks:** Finance, stakeholder support, management and staff, market demand
- **Market Risks:** Finance, market supply, market demand, regulatory environment, competition
## Implementation Timeline

<table>
<thead>
<tr>
<th>Details of the setting-up, Launch</th>
</tr>
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<tbody>
<tr>
<td>Funding: Finalize funding sources and close on transaction, revise budget appropriately</td>
</tr>
<tr>
<td>Admin &amp; infrastructure: incorporate the company, establish office, create operating policies, launch</td>
</tr>
<tr>
<td>Set up Advisory Board and Investment Committee</td>
</tr>
<tr>
<td>Hire staff</td>
</tr>
<tr>
<td>Begin select programs: tech sourcing, databases, market intelligence, identify and screen partners</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Programs</th>
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</thead>
<tbody>
<tr>
<td>Launch policy advocacy</td>
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<tr>
<td>Launch additional programs: mentor training, entrepreneurship training, develop toolkits,</td>
</tr>
<tr>
<td>Launch investment facility: Scouting, screening, selection</td>
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<tr>
<td>Launch partnerships with labs &amp; testing centers</td>
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<tr>
<td>Launch R&amp;D collaboration program</td>
</tr>
<tr>
<td>Launch CIC conferences</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Innovation cells</th>
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</thead>
<tbody>
<tr>
<td>Launch satellite cells</td>
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<tr>
<td>Launch partnerships with labs, testing centers &amp; Industry</td>
</tr>
<tr>
<td>Launch Applied R&amp;D program</td>
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<tr>
<td>Scale-up</td>
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<tr>
<td>Expansion contingent upon funding – facilities</td>
</tr>
<tr>
<td>Monitoring and Evaluation</td>
</tr>
</tbody>
</table>
### Governance

#### Staffing
- 9 staff in years 0-1
- 18 staff in years 1-4

#### Oversight Board
- 9 seats representing various industries/sectors
- Rotation every 3-4 years
- Ideally some sponsorship for board seats

#### Investment Committee
- 4-5 individuals
- Experienced financiers

#### Incorporation and Ownership
- Non-profit entity: Either trust or private company
- Charitable or institutional tax registration possible
- Ownership managed by oversight board
**Beneficiaries: Building a Pipeline of New Ventures**

- **Country:** India
- **Company:** Sun Air Power
- **Entrepreneur:** incubated by IIM(A)-CIIE
- **Clean Technology:** Solar and wind
- **Current capacity:** Minimal, in the start up phase
- **Employees:** 5

<table>
<thead>
<tr>
<th>Barriers</th>
<th>Solutions</th>
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</thead>
<tbody>
<tr>
<td>Lack of risk capital</td>
<td>Center could offer start up risk funding.</td>
</tr>
<tr>
<td>Technology</td>
<td>Center could facilitate networking with technology providers</td>
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<tr>
<td>Business support</td>
<td>Center could provide business training, market data etc.</td>
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<tr>
<td>Equipment and tools</td>
<td>Center could provide facilities where entrepreneurs can test their products and provide certified results to the market</td>
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</tbody>
</table>
Technology Priorities of CIC

Evaluation Criteria

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>TR</td>
<td>Technology Readiness</td>
</tr>
<tr>
<td>MD</td>
<td>Market Demand</td>
</tr>
<tr>
<td>AF</td>
<td>Availability of Funding</td>
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<tr>
<td>RS</td>
<td>Clear, Ready Stakeholders</td>
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<tr>
<td>BM</td>
<td>Business Model</td>
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<tr>
<td>IR</td>
<td>Leverage of Indigenous Resources</td>
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<tr>
<td>EC</td>
<td>Entrepreneurial Capacity</td>
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<td>WF</td>
<td>Workforce</td>
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<td>PO</td>
<td>Policy</td>
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<td>EI</td>
<td>Economic Impact</td>
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<td>GI</td>
<td>GHG Impact</td>
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<tr>
<td>SI</td>
<td>Social Impact</td>
</tr>
<tr>
<td>AT</td>
<td>Already on Track</td>
</tr>
</tbody>
</table>

Stakeholder Feedback

2. Relevance of Innovation Centers in India (2 Questions)

* 1. Please answer these questions on a scale of 1 to 5.
   (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Agree)

The discussion on climate innovation centers is important for developing technologies

1. To tackle climate change
2. To promote job creation and economic development
3. For social development and providing energy access to the poor

* 2. Please answer these questions on a scale of 1 to 5.
   (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Agree)

Prioritized Technologies

1. Water
2. Energy Efficiency
3. Agriculture
4. Solar
5. Transportation
6. Bio-energy

Technology 1: Water

Score: 4.1/5.0

Main technologies: R/O, solar filtration, desalination, rainwater harvesting.

Markets/applications: Domestic use, agricultural use, industrial use, recycling/waste water treatment, water use efficiency. Markets broken out into domestic (5%), industrial (6%), agricultural (89%)
Finland – Nokia: Sustainable Enterprise Creation

Track 1:
Growing Local Mobile Applications and Content, Fostering Mobile Entrepreneurs

Track 2:
Facilitating Innovation, Export Readiness and Technology Entrepreneurship

Track 3:
Convening the Community at the infoDev Global Forum on Innovation and Technology Entrepreneurship, Helsinki, 2011

Canada: Entrepreneurship and Innovation in the Caribbean

Component I:
Support and expand the Caribbean Network of business incubators, including establishing 6 new business incubators in the region

Component II:
Provide job related skills upgrading for incubator managers and resources for policymakers

Component III:
Develop a regional MSME Seed Fund