

# Energy Efficiency + Sustainable Energy Ecosystem for Healthcare



SELCO Foundation



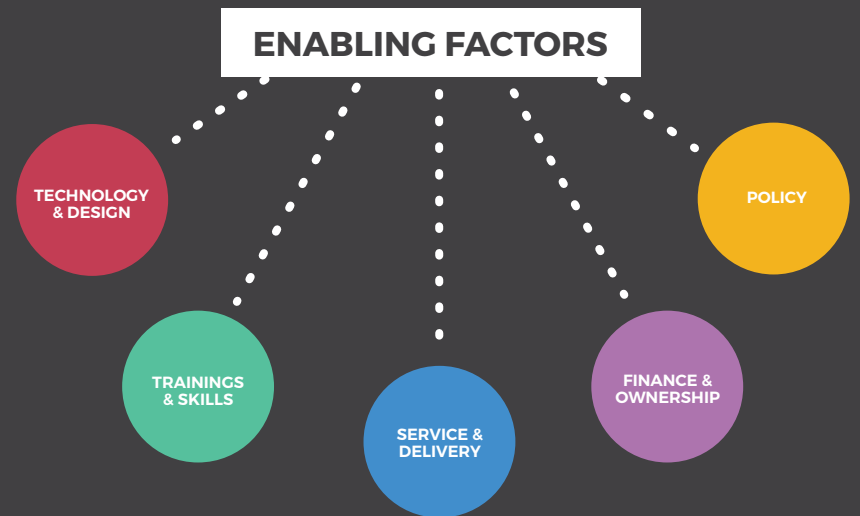
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SELCO Foundation

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## What is the ecosystem?

Any sector, especially in the development space, needs an ecosystem in order to deliver the appropriate services to the poor in the most effective and impactful manner. Using the analogy of the internet as the 'eco-system' upon which all web-based companies leverage, survive and profit today, there needs to be a similar ecosystem developed for energy+health service providers to be able to scale high impact solutions in a sustainable manner. This ecosystem needs to be built by a variety of stakeholders for the common good of the selected sector. A strong and stable eco-system, is the only way, the poor can avail all essential services in the most affordable and democratic manner.



Sustainable and affordable delivery of health services at the door step of the poor, needs maturity of the various critical parts for its own eco-system. These range from trained human resources to highly efficient appliances. By bringing in sustainable energy as a catalyst, it could disrupt in a positive manner many of the existing delivery models: thus benefitting many more people at the bottom of the pyramid

## What's missing in the Ecosystem? Who can fill the gaps?

	EFFICIENT APPLIANCES	RENEWABLE ENERGY SYSTEM	BUILT ENVIRONMENTS
TECHNOLOGY & DESIGN	<p><b>Manufacturers, vendors, suppliers, innovators, incubators/accelerators, Govt. R&amp;D departments</b></p> <ul style="list-style-type: none"> <li>Lack of R&amp;D for efficient and need based appliances for low resource contexts</li> <li>Supply chain and servicing</li> </ul>	<p><b>Clean energy enterprises, last mile electricians or similar work force, health staff/medical officers at the healthcare service point</b></p> <ul style="list-style-type: none"> <li>Lack of last mile human resources to audit, design, install and service the systems</li> <li>Appropriate and need based (health and end user focused) system designs</li> </ul>	<p><b>Architects, masons, contractors, civil engineers</b></p> <p>Lack of efficiency and sustainability in building designs (usability, natural lighting and ventilation and passive heating and cooling)</p>
TRAININGS & SKILLS	<p><b>Training Govt. and NGOs that provide capacity building for health care, health staff / medical officers at the healthcare service point</b></p> <p>Incorporation of new efficient and innovative equipment as part of healthcare training programs</p>	<p><b>Energy Enterprises/ service providers, Health staff / Medical officers at the healthcare service point</b></p> <p>Capacity of energy and health stakeholders to own the energy systems at a local level</p>	<p><b>Training institutes for public building constructions, Local Masons</b></p> <p>Awareness and capacity of stakeholders at various levels to incorporate green building technologies and designs</p>
SERVICE & DELIVERY	<p><b>Public health care points, NGOs bridging last mile delivery in health private health care providers, public private partnerships</b></p> <p>Lack of innovative delivery models to ensure democratized health access to last mile populations</p>		
FINANCE & OWNERSHIP	<p><b>Private procurement institutes, Govt. certification and procurement agencies</b></p> <p>Affordability and incentives for adoption of efficient appliances</p>	<p><b>Large multilaterals or development agencies or banks national and state level health depts, community/ health committees in charge of managing health points</b></p> <p>Capital and maintenance costs</p>	<p><b>National and state level health depts., public works department</b></p> <p>Incentives and mandates for green building guidelines</p>
POLICY	<p><b>Multilateral/ international development health agencies (public and private), national and state level health depts, incubators/accelerators</b></p> <p>Weightage to efficiency parameters in selection of health appliances</p>	<p><b>National and state level health departments, private service providers for last mile healthcare</b></p> <p>Lack of convergence/ incorporation on planning of energy for health</p>	<p><b>National and state level health depts., public works department</b></p> <p>Lack of convergence/ incorporation on planning of efficient built environments for health</p>

# What can we do moving forward?

## EFFICIENT APPLIANCES

- Problem validation, Market + User Research, testing and piloting the efficient technologies,
- Defining opportunities in efficiency in health devices and developing efficiency benchmarks for appliances,
- Connect health tech entities with public health experts/ mentors etc



TECHNOLOGY & DESIGN

## RENEWABLE ENERGY SYSTEM

- Building process for health+energy audits, toolkits for system design and quality control
- Guidelines for monitoring, servicing and maintenance

## BUILT ENVIRONMENT

Setting guidelines and parameters for different climatic typologies on incorporating green building design to reduce the energy load develop new specialized built environments for further decentralizing healthcare

Training modules on usage and maintenance of efficient/ innovative appliances

- Build technical capacity in: Assessing and evaluating renewable energy systems
- Installation, servicing and maintenance of renewable energy systems

Build technical capacity in designing and building health points with basics of green construction as guidelines



TRAINING & SKILLS

Demonstration of delivery models that further decentralizes health care by using sustainable energy and energy efficient innovative technologies as a catalyst



SERVICE & DELIVERY

Cost benchmarks based on energy savings and decentralisation benefits (increase in number & quality of services) for efficient appliances

- Loan structures and financial modeling for loan term asset based health+energy programs
- Disbursement models of locally available funds for maintenance and servicing

Demonstrating financial and socio-economic benefits of incorporating green building guidelines in health points



FINANCE & OWNERSHIP

- Procurement guidelines inclusive of efficiency while purchasing large quantities
- Incentives and support systems to encourage energy efficiency/ decentralization as parameters for health tech designs

Policy guidelines on powering health for different needs and typologies in health care provision (auditing, assessment, tendering, deployment and maintenance)

Policy guidelines on green building for different needs and typologies in health care provision (auditing, assessment, tendering, deployment and maintenance)



POLICY

## Stakeholders

This is a representative list including partners of SELCO Foundation.

### INNOVATORS / MANUFACTURERS

GE - Health  
Godrej Appliances  
Remidio  
Phillips  
Lifelabs  
Janitri  
InnAccel

### INCUBATORS/ ACCELERATORS

IKP  
PATH  
Social Alpha  
Villgro  
HealthStart

### ENERGY ENTERPRISES

Mangaal  
Mukti Energy  
ONergy  
Boond  
SELCO Solar Light Pvt. Ltd.  
Sun Farmer  
ENVO Business Solutions  
TATA BP Solar

### GOVERNMENT DEPARTMENTS

National Health Mission  
National Health Systems Resource Centre  
State Health Systems Resource Centres  
National Accreditation Body for Health  
Ministries of Health  
Ministries of New & Renewable Energy  
Ministry of Science & Technology  
Department of Health Research

### ENERGY+HEALTH FUNDERS

Gates Foundation  
TATA Trusts  
Good Energies Foundation  
Lemelson Foundation  
DOEN Foundation  
IKEA Foundation  
Efficiency for Access Coalition

### POLICY & ADVOCACY

World Health Organisation  
International Renewable Energy Agency  
United Nations Foundation  
Clean Energy Access Network  
World Resources Institute  
Council on Energy Environment & Water  
SOCHARA  
Institute of Public Health  
Public Health Foundation of India

### HEALTH CARE PROVIDERS

Karuna Trust  
C-NES  
Doctors without Borders (MSF)  
Swasthya Swaraj  
Piramal Swasthya  
ACCORD  
Tribal Health Initiative  
Jan Swasthya Sahyog  
Doctors For You  
Catholic Health Association of India  
Emmanuel Health Association  
Karma Healthcare  
WISH Foundation  
International Committee of the Red Cross  
Orbis  
Aravind Eye Care

### UNIVERSITIES

Centurian University  
IIT Madras  
IIT Delhi Inclusive Innovation Dept  
IIT Mumbai TATA Center  
Manipal Institute of Technology  
IIM Ahmedabad - CIIE