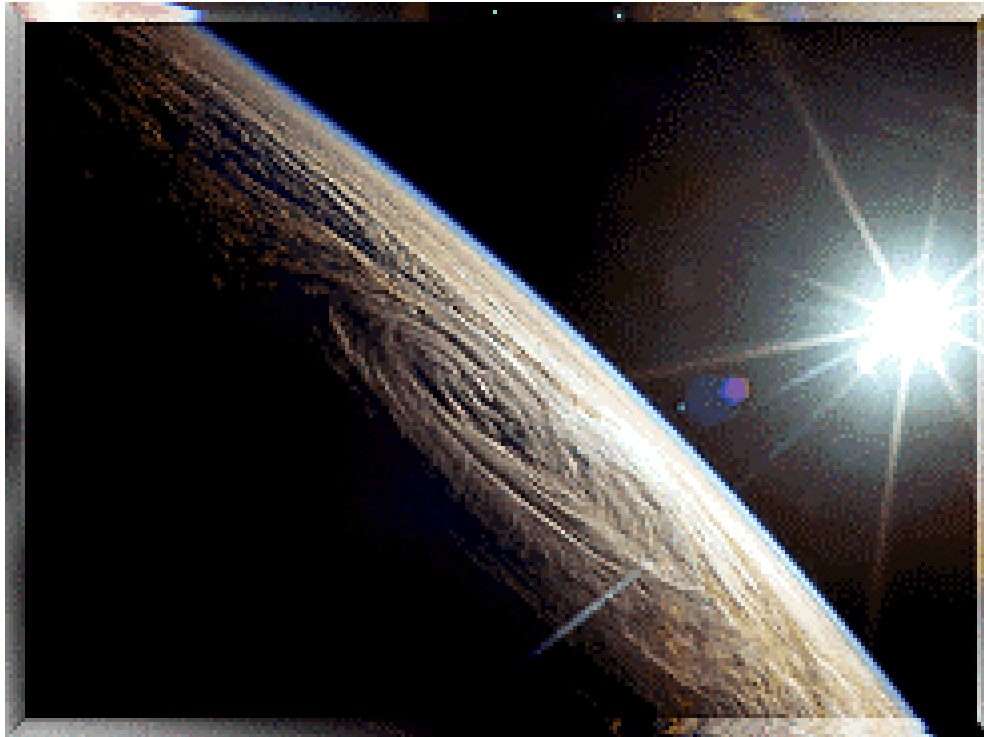


Growing Digital Markets



and, at the same time,
Growing Solutions to Global Problems

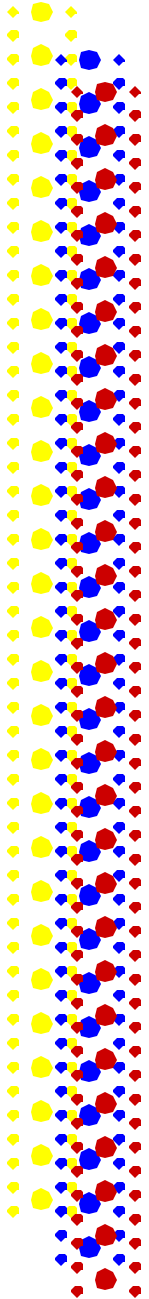


The untapped, frontier market

Today, 2 billion rural people have no access to electricity, or digital tools.

Both are critical for creating sustainable livelihoods.

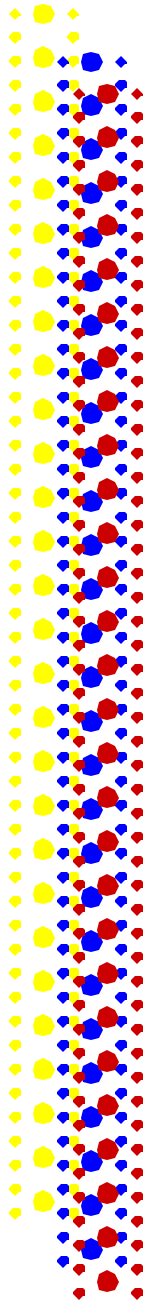




How to reach them?

micro- ϵ .net





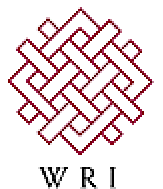
micro- ϵ .net

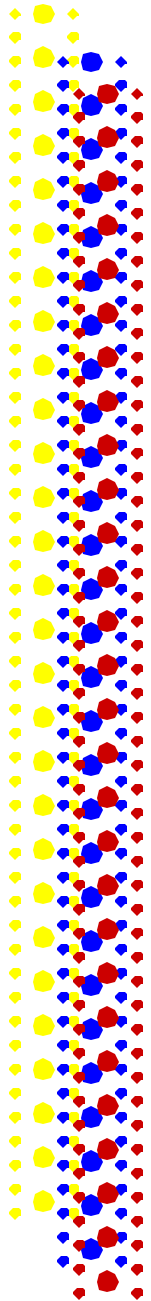
Micro-electronics

Micro-energy

Micro-enterprise

Micro-emissions

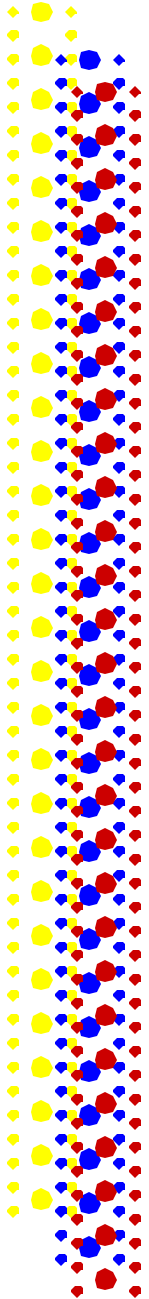




Strategies for creating value in the company's "White Space"

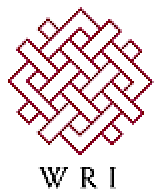
Finding value outside core competencies and existing market segments

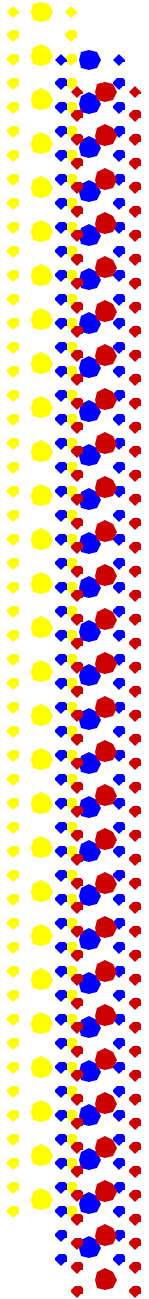
Discovering opportunities in new markets in emerging economies



Digital Networks are about organizing the unorganized.

They're about giving unorganized users a way of creating communities of value.

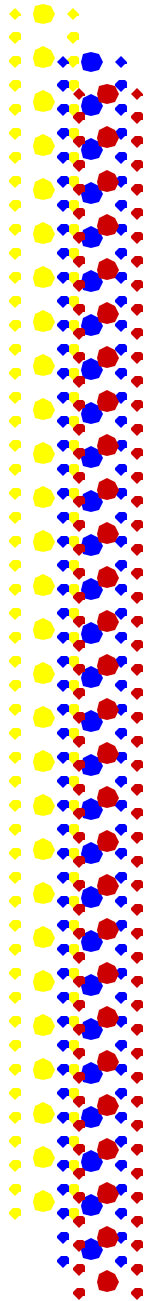




Digital networks make the incremental cost of communication ultra-low....

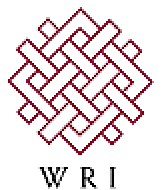
....and make the value of being in a community ultra-high.





micro- ϵ .net

Is about the
opportunity to
create mega-value
from micro-
transactions



The Micro-Fortunate Market

A stark contrast between the impoverished market and the micro-entrepreneurial market.

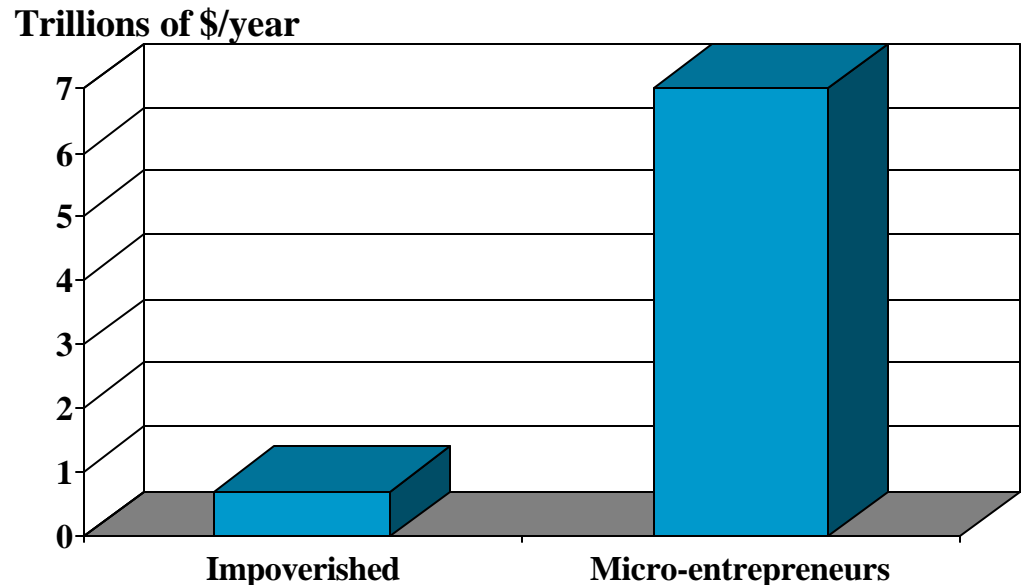
2 billion micro-entrepreneurs, each launched w/ 1/2 dozen \$100 loans, enter the permanent ranks of profit centers.



The Micro-Fortunate Market Purchasing Power

The micro-fortunate increase purchasing power by an order of magnitude.

That's \$7 trillion per year of financial transactions.



Micro-Credit Track Record

20 year, multi-billion dollar successful track record.

Tens of millions of micro-entrepreneurs achieving 98+% loan repayment and less than 1/2% default rate.



Risk-Managed Entrance

Leverage \$20 billion of micro-credit committed by Financial Development Institutions over next two decades.





Creating a New Profit Pool

Why wait for electric grids to be built?

That's just hundreds of billions of dollars of foregone profits.

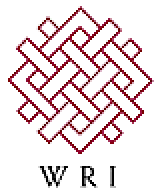
Market self-powered, wireless digital tools.

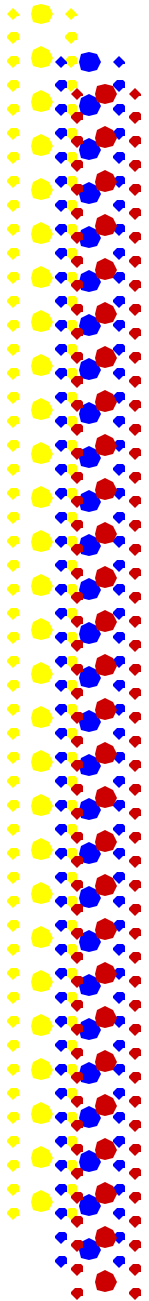
Micro-power Generation

Just as semi-conductors have been the engine of digital wealth, so can they be the engine of onsite power systems, using the Sun's bits as disaster-free fuel.



South Face Institute Eco-Green building in Atlanta, with building integrated Photovoltaic roof shingles.

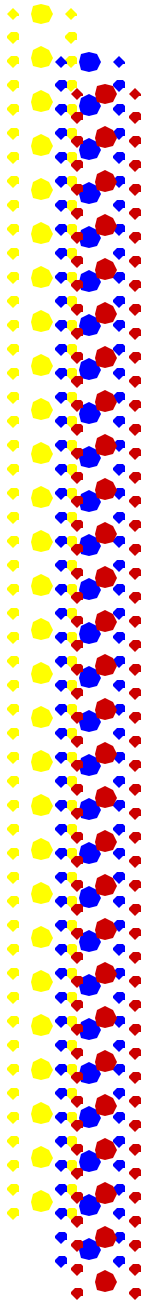




Micro Value

Semi-conductors have led the wave of miniaturization, increasing added value while reducing needed resources.





Micro Value

Next \Rightarrow
semi-conductor-driven
micro-power plants
embedded in roof
shingles.



Micro prices

Digital fortunes are made from rising sales due to falling prices & greater value.





Micro prices

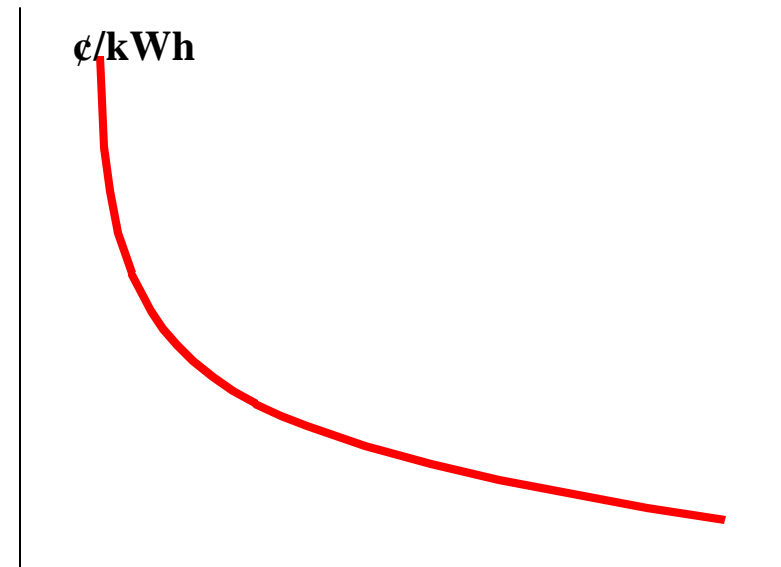
Similar potential
with photovoltaic
(PV) power
systems - -
higher volume will
lower prices,
while adding value.





PV micro economics

PV power today costs 25¢ per kWh, but could drop 400 percent to just 6 ¢ per kWh.





Mass Produced power plants

Thin-film PV cells are manufactured in same high-tech manner as other semi-conductor products.



PV growth paths

Large-scale utility
solar farms, growing
100-MW per year;

and

Small-scale, on-site,
off-the-grid 100-W
systems.





PV Micro- ϵ

Participation Benefits

- n Market creation
- n Brand identification
- n Market positioning
- n Market intelligence
- n Loyal customers
- n Employee morale
- n Shareholder value
- n Humanitarian results
- n Environmental gains
- n Economic development
- n Global good will
- n Social prestige



Help WRI Create micro-ε.com

- n **Partner** with WRI to create micro-ε.com
- n **Support** micro-ε.com alliance
- n **Invest** in equity, quasi-equity, or debt holdings in micro-energy, micro-credit and micro-enterprise opportunities



Health and Healing

Semi-conductor micro-powered health clinics can save many of the millions of children who die each year for lack of refrigerator-stored vaccines.





Clean, disease-free Water

Semi-conductor
micro-power can
filter water --
could save some of
the 1 million children
who die each month
from disease spread
by contaminated
water.





Micro farming

Food for life

Laptops can be mobile cooperative extension services - visualizing for the illiterate but intelligent how to achieve food security, nutrition and higher farm incomes.





Schooling

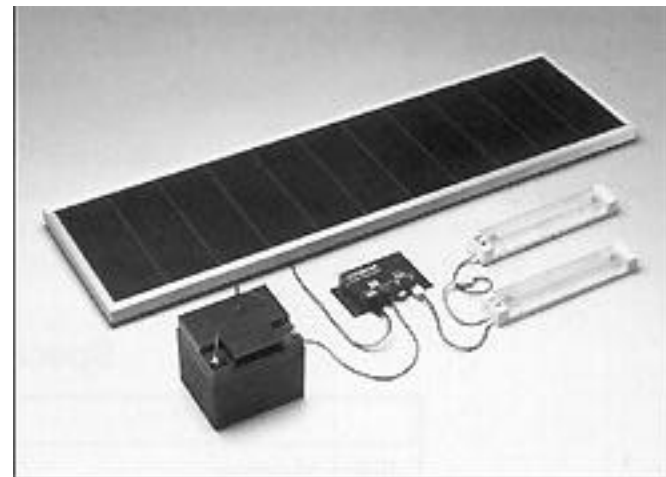
Micro-powered classrooms can help seed the world's next wave of micro-entrepreneurs by powering micro-computer learning stations.



Micro power savings

An 8-watt compact lamp generating 400 lumens, powered by a \$500 PV provides higher quality lighting at a lower cost: \$7.15 per million lumen-hours (MI-h) vs. a kerosene lamp at \$400/ MI-h.

Also prevents release of half-ton of greenhouse gases.



Freed from the Dark

Semi-conductor micro-powered lamps enable people to spend night time schooling, training, and life-long learning.

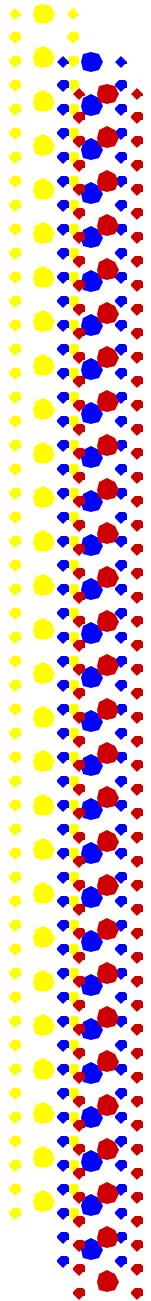




Communication

Micro-powered devices enable access to satellite broadcast programs in the most remote of places on Earth.





Edutainment

Micro-powered telephones, radios, TVs, VCRs, CD-ROMs, and Internet connections can engage folks for play & pay, as well as learning.





Village power

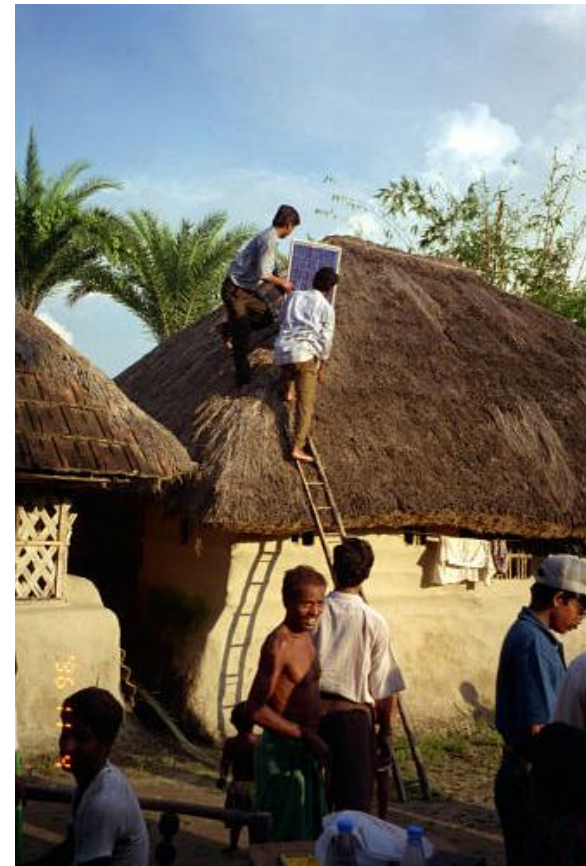
Micro power is a ***critically enabling technology*** for fostering myriad village scale micro-enterprises.





Installation micro businesses

Village-scale micro-utility grids literally get expanded modularly:
one PV module after another



Grameen Bank founder

Banking on the poor

Bangladeshi
Economics Professor
Mohammed Yunas,
founder of the
Grameen Bank, has
helped millions of
families transform
impoverished lives
into highly productive
ones.



Eradicating poverty the micro lending way

Experience shows it takes the utterly destitute 6-10 successive loans (1 year each) - to cross the poverty line. The first loan is often just \$ 50. Average loan size is about \$ 100.



Eradicating poverty - the macro outcome

Some 80% of Grameen borrowers have crossed the poverty line. For those who do not perform as well, poor housing in rain-soaked Bangladesh and chronic ill-health are identified as the major reasons.



Micro bank for the poor

Since 1983, Grameen has given out 16+ million micro-loans, and has unparalleled customer loyalty. On-time loan repayments exceed 98%. Defaults (bad debts) are less than 1/2 of 1%. This bank outperforms most banks around the world.



Micro bank of the poor

Dr. Yunus designed the bank so ownership & control belong to the people it lends to.



Micro bank of the poor

As soon as a borrower accumulates sufficient saving, she buys 1 (and only 1) share in the Bank, which costs \$3.



Micro banks for the global poor

Over 1,100 Grameen Bank branches are operating in some 50 countries, and a new one is created some where in the world each week.



Micro banks for the global poor

Plans are to take credit to half a billion poorest people by the year 2005, & to all of world's 1.3 billion poor by the year 2025.



Bare-foot bankers - from Bangladesh to Bolivia

In the Grameen Bank model, the optimum size of a family loan is half the yearly income of the country. For the world's 1.3 billion poor, the optimum loan size is \$ 120 to \$ 300.

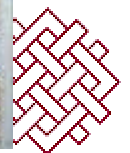
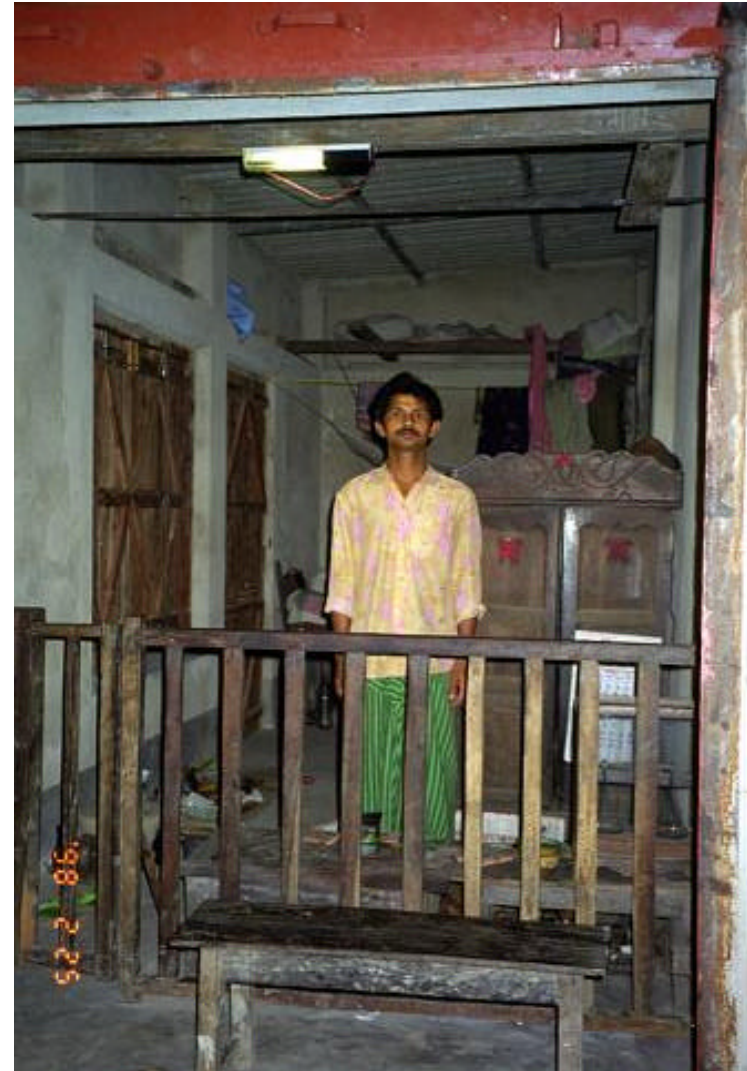




GrameenShakti

Brightening up life

Micro-utility service provider Mr. Umor, who owns a grocery shop. He bought a PV system with 6 lamps. One lights his shop, and he rents the other 5 to nearby shops, increasing income by \$12.50/month, paying for entire investment in 40 months.





E&CO Projects

- n PV Leasing Company - Dominican Republic
- n Photovoltaic Revolving Loan Fund (CrediEEGSA) - Guatemala
- n Soluz Honduras - Honduras
- n Banco del Campo Revolving Credit/Guarantee - Nicaragua
- n Energy Capital Holding Company - Latin America
- n Gansu Photovoltaic Company - China
- n SELCO Photovoltaic Electrification Pvt. Ltd. - India
- n NOOR Photovoltaics - Morocco
- n Lotus Energy PV Project - Nepal
- n SELCO Viet Nam PV Project - Viet Nam
- n Solar Development Corporation - Global

Environmental Enterprises Assistance Fund (EEAF)

EEAF is a non-profit Venture Capital Fund, created with the assistance of foundations and bilateral agencies. It provides long-term risk capital to RE and environmental businesses in developing countries.



World Bank group & Foundations

SDC, the Solar Development Corporation, is a public-private venture to accelerate PV systems in developing countries 10-fold. Initial \$50 million capitalization to be leveraged 3- to 4-fold. Two services: 1) financial intermediary; 2) business incubator.



Locally Intelligent Communities

LINCOS, pioneered by former Costa Rican President Jose Maria Figueres, is bringing wireless communications to off-grid villages to grow sustainable livelihoods.



Suntainer solar power generator

ASE's Suntainer provides "off-grid power" virtually anywhere in the world. Suntainer generates up to 20 kWh/day of power -- enough for a village, or to power small mfg, agricultural and construction, hospital and school facilities.



A Suntainer at a remote site in Tanzania.



A Suntainer operating in Malaysia.





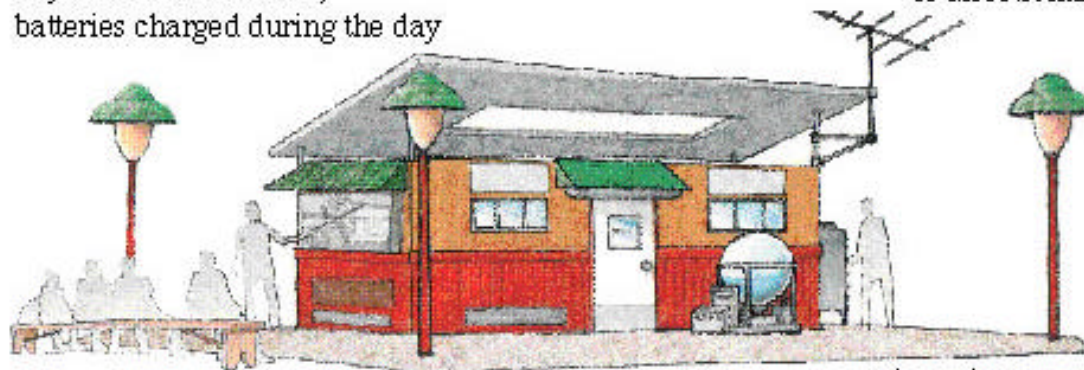
Greenstar

Operating

Greenstar provides a complete self-contained community health center, with its own source of solar power. It can be installed anywhere, and can provide important communications, ecommerce, educational and technical needs as well.

photovoltaic solar array on adjustable roof surface; batteries charged during the day

spread-spectrum cellular antenna connected to existing voice & data networks; bi-directional high-speed circuit



solar-powered street lamps encourage evening community participation, "town square" atmosphere

large rear-projection external video screen provides community health education

roll-up front door provides security

batteries store solar energy for power at night

water purification or desalination system provides safe, healthy water supply



Greenstar

Interior

The interior contains a complete medical clinic, with facilities for first aid, testing, vaccination, coolers and secure storage for medicine, all powered by solar energy. Video consultation with medical experts worldwide may take place through telemedicine conferencing. In addition, a small classroom and ecommerce area are provided.

