STIFTUNG
SOLARENERGIE
SOLAR ENERGY FOUNDATION

ENLIGHTENING LIFE

Ensuring Access to Affordable, Reliable, Sustainable and Modern Energy for All (SDG 7)

Solar Energy Foundation

Experiences and Best Practices

Samson Tsegaye, County Director,

June 23,2016

ETHIOPIA

- Population size (2016): 99.39 million(world bank)
- 29.6 % access to the grid and 7.6% in rural areas(world bank 2016)

Plan(Rural Electrification)

GTP II, 3.6Mill lanterns and SHS 400,000 by 2020

Incentive from the Ethiopian Government

- Import duty free
- Loan for Private business and MFIs

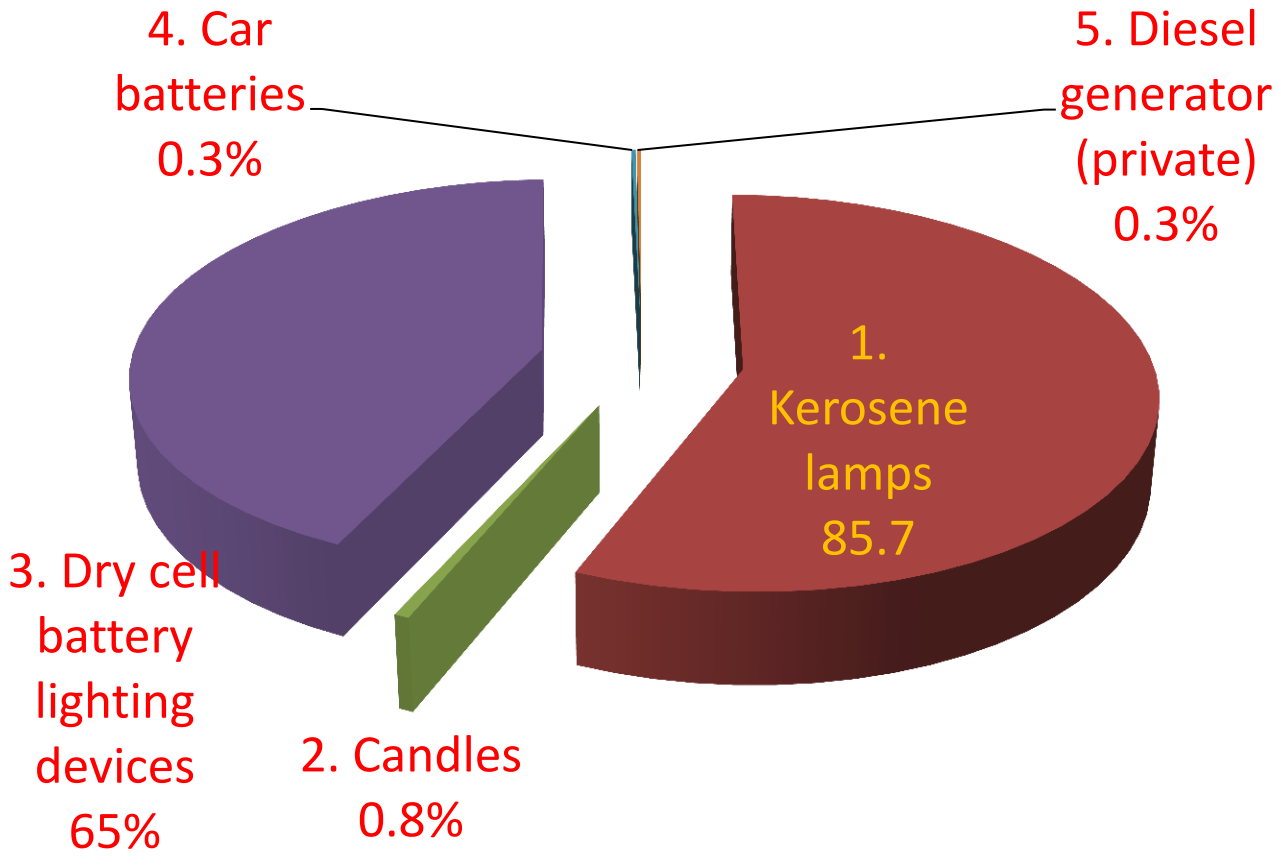
So far

- 40,000 solar home Systems installed in 7 year instalment loan(REF)
- Close to 60,000 SHS and 1million lanterns sold (by NGOs and private companies)

Over 14 million Ethiopian rural households demand for solar

Energy source for lighting % of HHs

(4main regions, lighting Africa report)



Why Solar for the Rural

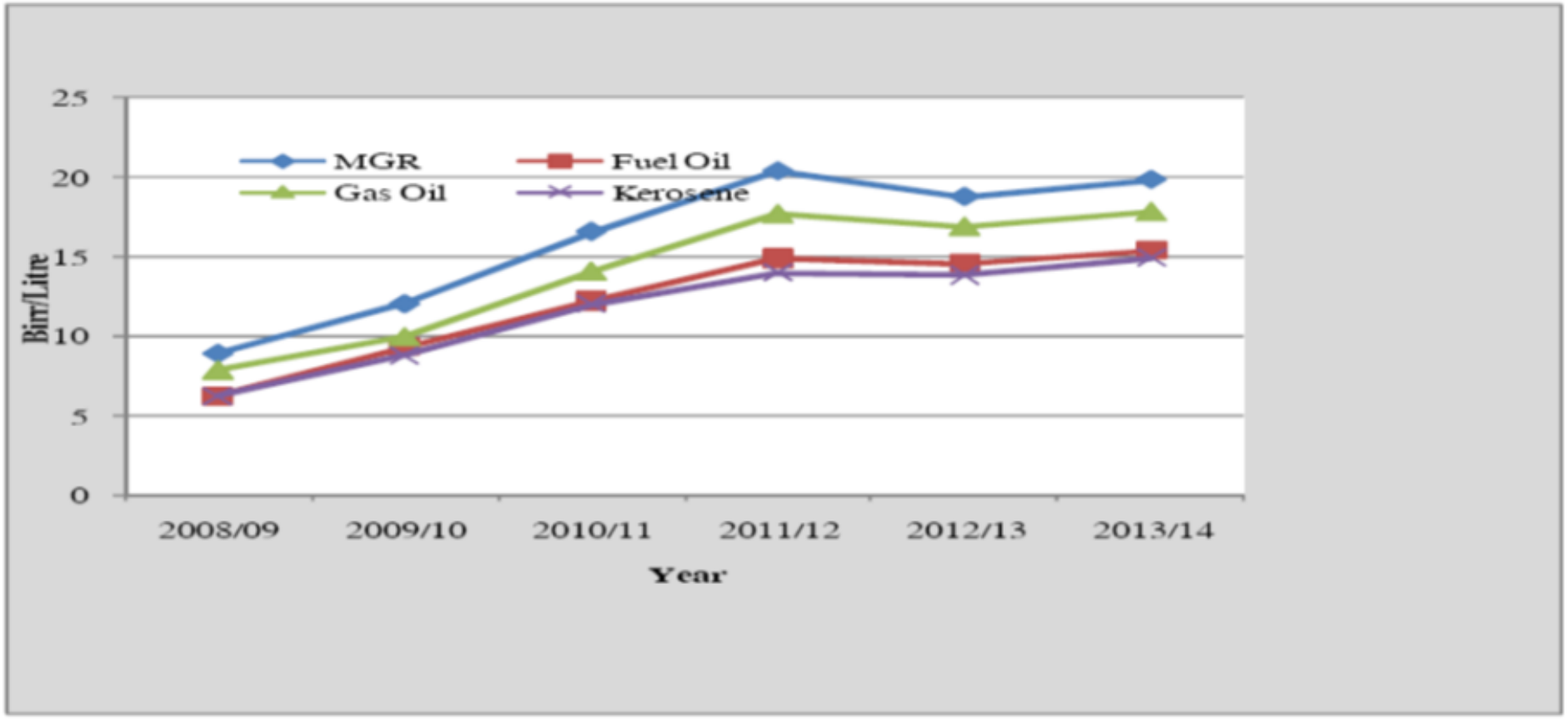
- Thirteen Months of Sunshine
- Fuel cost
- Kerosene lamp side effects
- Distance to shops and others
- The only alternative for the rural from clean energies
- Almost no activity after sunset in all rural areas,




Kerosene price

STIFTUNG SOLARENERGIE
SOLAR ENERGY FOUNDATION
ENLIGHTENING LIFE

Fig. II.3: Trends in Average Fuel Price in Addis Ababa



Source: Ethiopian Petroleum Enterprise.

Based on the 2014 price of kerosene, it is estimated that over 235 million litres are used each year for lighting by rural households.

For Better Education

STIFTUNG SOLARENERGIE
SOLAR ENERGY FOUNDATION
ENLIGHTENING LIFE

The amount of dry cell batteries used and discarded annually by the rural households is estimated at 278 million units

I am tired;

The Gap

- Very few suppliers in the market
- Suppliers mostly based in big cities
- Rural settlement, difficult to access, very scattered
- Lack of awareness on available technologies
- Shortage of local stock
- Lack of professionals
- Hard currency

STIFTUNG SOLARENERGIE
SOLAR ENERGY FOUNDATION
ENLIGHTENING LIFE

STIFTUNG SOLARENERGIE-SOLAR ENERGY FOUNDATION

→ SEF was established in 2005 in Germany by the founder Dr. Harald Schutzeichel

→ Registered in Ethiopia as an international NGO in 2007

Mission: Poverty alleviation and creating a long-term sustainable solar market in Ethiopia

- Knowledge transfer, by train solar technicians and make them available for the developing solar market
- Creating Jobs

Our Approach

- Light For Education,I,II,III
- Scaling up Solar Energy Supply(Revolving Fund)
- Lighting Rural homes and community services
- Solar power installation for Health institutions
- Lighting Student Homes

Light for Education

REMA project approach

SHS installed free

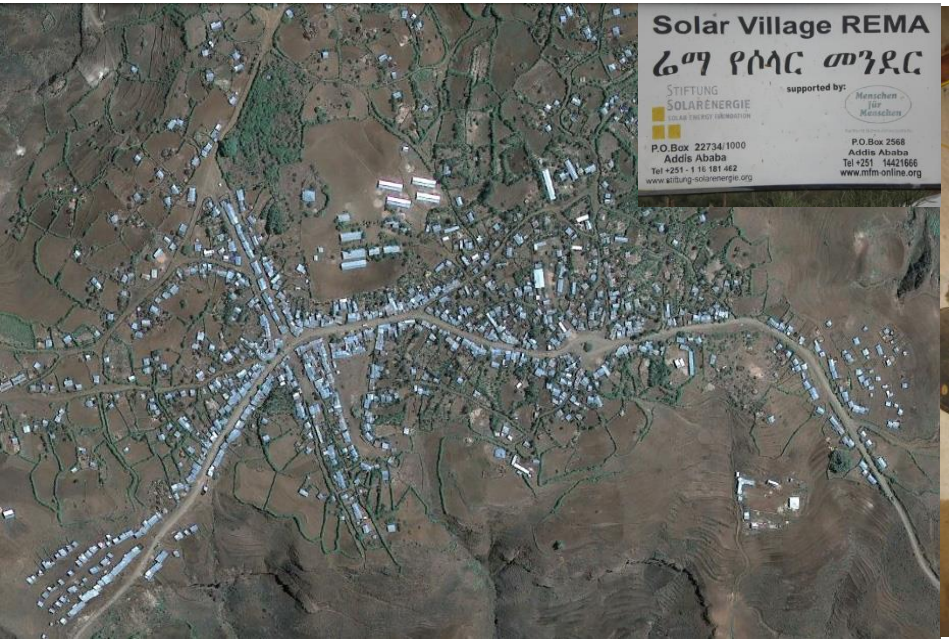
Users saving small amount monthly which they used to spend previously for Kerosene

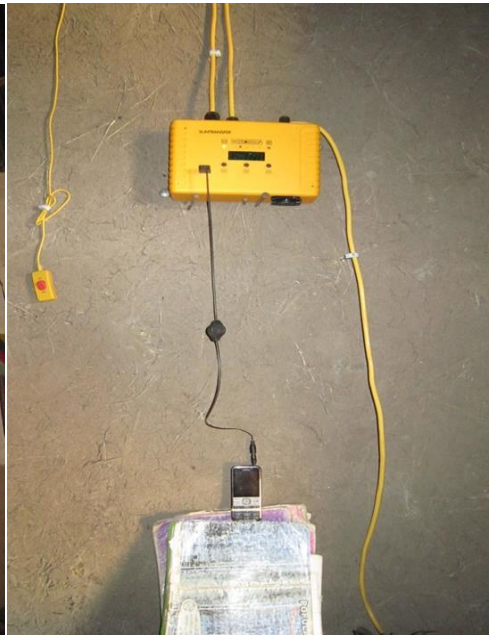
This saving is used for replacements(battery, lamps…)

- Light for Education project ,Cont…

STIFTUNG SOLARENERGIE
SOLAR ENERGY FOUNDATION
ENLIGHTENING LIFE

- Elected community members are responsible saving collection
- Technicians, trained from the community and employed by the community are responsible for after sales service
- System will be removed if users defaulted for three consecutive months
- 4 solar villages established





Solar water pumping, REMA




Water Disinfection



✓Solar Water pump

First Reservoir

Second Resrevoir

Third Reservoir

Solar Street light, Rema

At main spots

Night class for adults

Solar Cooling For Bars

Our approach cont.

STIFTUNG SOLARENERGIE
SOLAR ENERGY FOUNDATION
ENLIGHTENING LIFE

Scaling up solar energy supply (revolving fund)

- Different size solar systems distributed on credit & cash sales approach
- Credit facility (five, three, two years) for only fix installed systems not for lanterns

ST 2

ST 10

Power Box

Media Box

DC TV

Our approach cont.

- We developed smart charge controllers for credit sales (PAYGO)
- Over 30000 different size Solar Lighting systems distributed

Remote Control

RFID

Pay -to -owr

Affordability

or

Availability

- **Lighting Rural Homes and Community Services (Arso Amba)**

✓ Users cover 25% of the material cost on cash and credit bases

✓ Over 700 House Holds electrified

Solar Power Installation for Health Institutions

STIFTUNG SOLARENERGIE
SOLAR ENERGY FOUNDATION
ENLIGHTENING LIFE

Over 16,048 Health posts (accounted for up to 5600 people)
Over 3335 Health centers (accounted for up to 26390 people

Lighting Student Home



1000 Students from two elementary schools received one M300XL Niwa Solar Lantern

Solar Centers

Solar Technicians Training Center

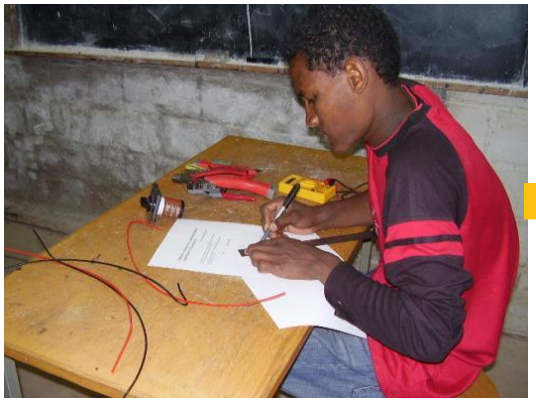
STIFTUNG SOLARENERGIE
SOLAR ENERGY FOUNDATION
ENLIGHTENING LIFE

REMA, First Solar village North Shoa

Solar Valley, Tatek, Addis Ababa

STIFTUNG SOLARENERGIE
SOLAR ENERGY FOUNDATION
ENLIGHTENING LIFE

Training



recruitment

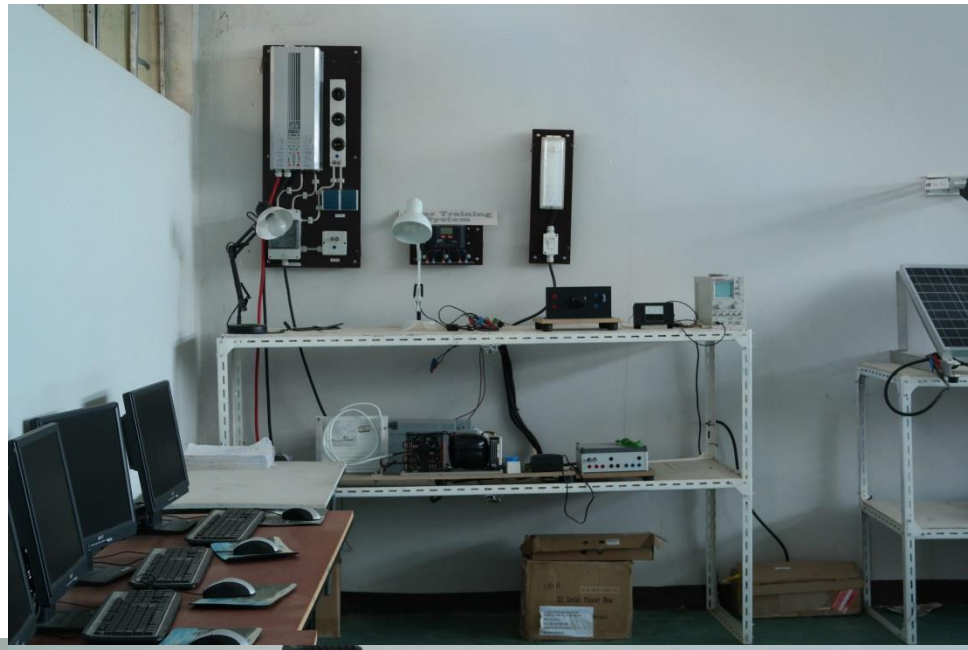
Training

Graduation

On job training

Job Creation

Laboratory Equipment




SOLAR SOLDIERS

Limitations & Challenges (NGO)

- Policy
- Finance for projects
- Finance for startups
- Infrastructure
- Project overlap, No clear plan from the Grid company or different donors

Commitment

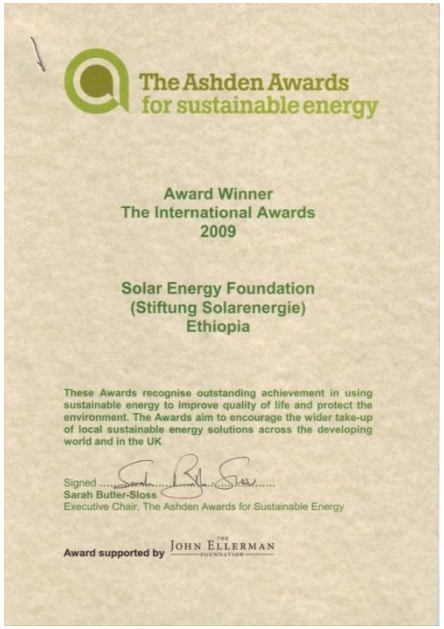
STIFTUNG SOLARENERGIE
SOLAR ENERGY FOUNDATION
ENLIGHTENING LIFE

Lessons Learned

STIFTUNG SOLARENERGIE
SOLAR ENERGY FOUNDATION
ENLIGHTENING LIFE

1.Trust

2. After sales service
3. Financial solutions
4. Product availability in local
5. Product quality
6. Proper technicians training


The Ashden Awards
for sustainable energy
Award Winner
The International Awards
2009
Solar Energy Foundation
(Stiftung Solarenergie)
Ethiopia
These Awards recognise outstanding achievement in using sustainable energy to improve quality of life and protect the environment. The Awards aim to encourage the wider take-up of local sustainable energy solutions across the developing world and in the UK
Signed
Sarah Butler-Sloss
Executive Chair, The Ashden Awards for Sustainable Energy
Award supported by
JOHN ELLERMAN


Ashden Awards
sustainable en


Global Energy Award 2013
Certificate
(c) 2013 Stiftung Solarenergie


President Clinton Rema Visit 2009

Challenges for local solar business

- Hard currency for import
- Finance, Loan locally and from abroad
- Bad quality products import , and bad price competition
- Fake and copied products

Suggestions to accelerate clean energy access

- **Awareness**
- Distribution Network
- Access to finance for SMEs
- Quality and standard
- After sales service
- Product availability
- Local Assembly and next step, from lanterns to SHS
- Proper training for technicians
- Establishing strong association of stakeholders


Let us thank Kerosene light
for its great service for the long past years
And
Find a place in a museum
And
Replace it with NEW,CLEAN AND BETTER
SOURCE OF LIGHT

Switch the light on!

አመሰግናለሁ

Thank you