

# **TECHNOLOGY TRANSFER PROJECTS AND INSTITUTIONAL DEVELOPMENT IN DEVELOPING STATES**

**SUCCESS AND FAILURE OF SOLAR HOME  
SYSTEMS IN RURAL AFRICA**

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# Agenda

- Introduction
- Solar power in rural Africa
- 2 different solar home system [SHS] models:  
“fee-for-service SHS” v. “market SHS” model
- Case studies: Zambia and Kenya
- Connection between the SHS model and the institutional development in developing States

# Technology transfer projects

- Developed States parties are urged to *“take all steps to promote, facilitate and finance the transfer of or access to environmentally sound technologies and know-how”*.
- Success of the projects measured:
  - technology is environmentally friendly
  - technology reduces pollution

# Solar home systems in rural Africa

- Electricity is important for the development of rural areas in Africa.
- SHS are financially more accessible to consumers than grid electricity.
- SHS produce enough energy for the needs of the average household.
- Two user models developed:  
*“fee-for-service SHS” and “market SHS”.*

*“Fee-for-service  
SHS”*

v.

*“Market  
SHS”*

	<b>Fee-for-service SHS</b>	<b>Market SHS</b>
<b>Ownership</b>	Energy Service Company	User
<b>User costs</b>	Installation and monthly consumption	Whole system
<b>Maintenance</b>	Energy Service Company	Local services
<b>State</b>	Zambia	Kenya

# Zambia – “*fee-for-service SHS*”

- Adopted a set of legal rules governing rural electrification.
- Established an Energy Regulation Board that oversees and regulates the provision of electricity
- Has a well functioning judiciary body which ensures the respect for different contracts and agreements between users, technicians and the providers.

# Zambia – “*fee-for-service SHS*”

- Lack of micro-loans for rural population.
- Zambian banks reluctant to give loans to rural population.
- Interest rate for loans is 50-60 %.
- World economy rankings:
  - 86<sup>th</sup> in category of enforcing contracts,
  - 97<sup>th</sup> in category of getting credits.

# Kenya – “*market SHS*”

- Self-organized and unsubsidized over-the-counter commercial market.
- Hundreds of rural vendors of SHS.
- A selection of low and high quality SHS.
- Availability of loans with lower interest rates.
- Initiatives by the World Bank and other international organizations to provide other favourable loans.
- Established system of hire-purchase companies.



# Kenya – “*market SHS*”

- Lack of regulation of the SHS market.
- Low respect for rule of law.
- Corruption a big problem.
- World economy rankings:
  - 13<sup>th</sup> in category of getting credits,
  - 103<sup>rd</sup> in category of enforcing contracts.

# Connection between the SHS user model and the institutional development

- judicial institutions are well developed → *“fee-for-service SHS”* will be successful
- financial institutions are well developed → *“market SHS”* will be successful
- Success of the technology transfer project depends not only on the positive environmental effects, but also on how well it is inline with the institutional development of the developing State.