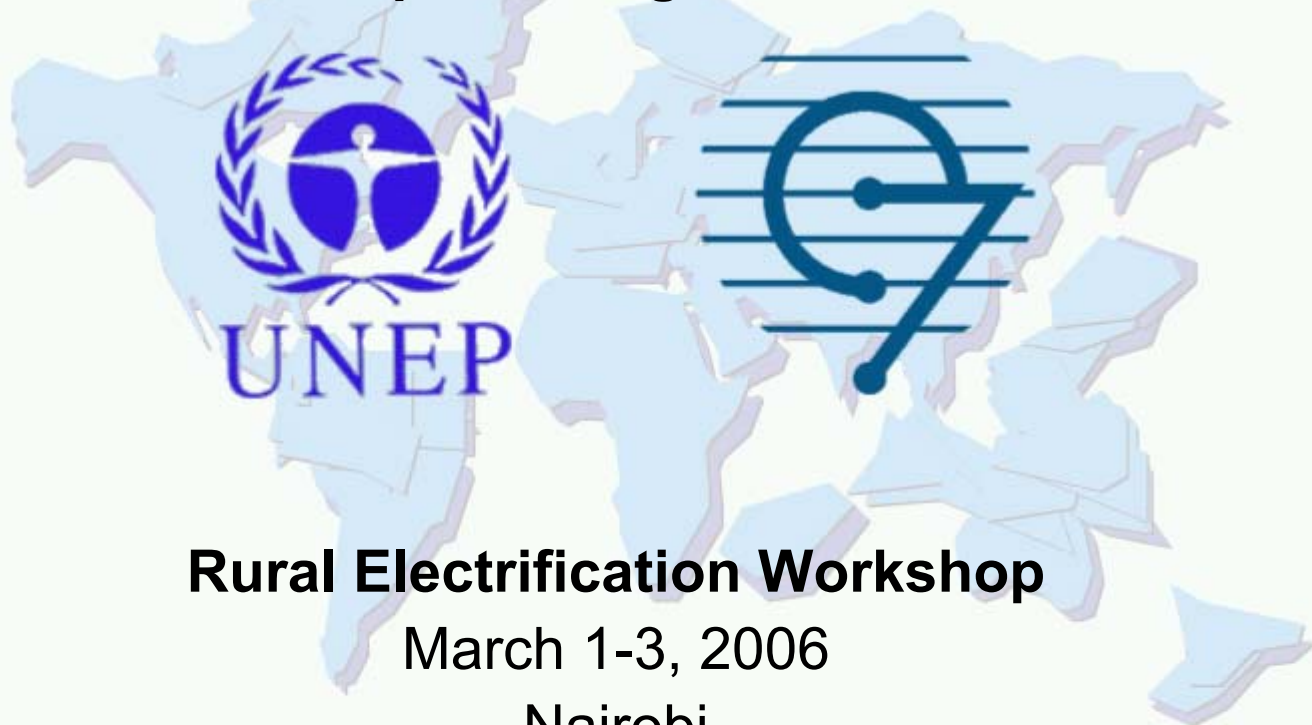


**Session 5.1 Project operation**

**Operating Rural Electrification projects -  
Overview with special focus on: Finance,  
technical and environmental aspects**

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**Rural Electrification Workshop**

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A successful operating Rural Electrification project

shall provide of

efficient, reliable and affordable energy (power) that is sustainable and environmentally sound

## Rural electrification problematic

- Costly scheme due to
  - Low population density
  - Difficult terrain
  - Low consumption
- Affordability: Low rural incomes
- Financial viability: Subsidies

## Finance aspects

- Reasonable investment cost: appropriate technology
- Involvement of private sector capital and capabilities make more rapid and efficient RE
- Transparent pricing framework (approved electricity tariff)
- Clear financing structures: business plan including loan or grant

## Finance aspects

- Credit schemes are tailored to the specific needs and repayment capacities of customers/end-users
- Promote rural income-generation activities
- Affordable tariffs: Payment capacity analysis
- Business-oriented and competitive approach

## Technical aspects

- Optimal matching resource with demand assessment and consumption behaviour
- Demand-driven planning
- Efficient hardware dimensioning: achievement of high load factors
- Improve efficiencies in order to reduce the high cost of energy: technical and non-technical losses

## Technical aspects

- Promotion of local hardware manufacturing
- Energy supply reliability as success factor: customer satisfaction
- Professional quality maintenance and repairs are included in the electricity tariff
- Proper operation guaranteed through local training measures

## Technical aspects

- Technology acceptance
- Social and productive uses of energy
- Compatibility of RE and ICT
- Clear ownership and operating scheme
- Proper O&M concept

## Environmental aspects

- Level of local pollution: soil conditions, surface and groundwater, natural resources, land-use patterns
- Mitigate the environmental impact through an Environmental management plan
- Environmental mitigation costs included in tariff structure
- Substitution of conventional and pollutant energy resources through renewable energies

## Environmental aspects

- Avoided CO<sub>2</sub> emissions: Carbon credits
- Promote sustainable forestry practices (Fuel wood as resource)
- Participatory methods for sensitivity campaigns
- Monitoring and evaluation of the outputs and environmental impacts of the project