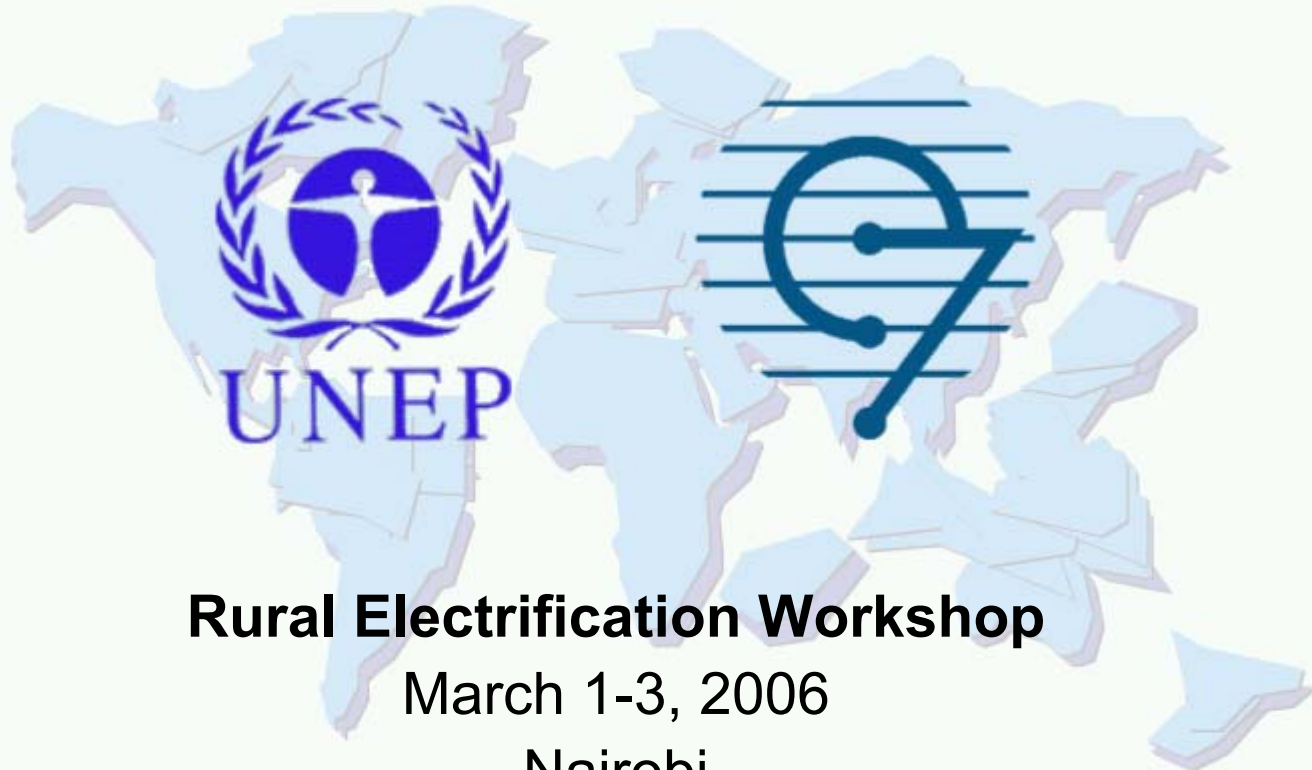


**Session 4.1**

# **West Nile Rural Electrification Project**

## **Case Study**

**Dr. Kevin Kariuki**



# Who is IPS?

- IPS is the Industrial Development arm of AKFED
- About AKFED
  - For-profit agency involved in long-term investments
  - Difference with usual commercial investor
    - Combines profitability & strong dev. objective
  - Network within network
    - 90 different companies, 18 countries
    - 35,000 employees
  - Businesses
    - Industries, incl. Agri-business, Printing & packaging
    - Hotels, media and airline
    - Banking & insurance
    - Infrastructure (power and telecommunications)
  - Controls assets over US\$1.5b



# IPS in East Africa

- Operates in Kenya, Tanzania and Uganda
- IPS shareholders
  - AKFED, IFC & DEG (>80%)
  - East Africa Development Bank among others
- Businesses
  - Printing & Packaging
  - Specialized Textiles
  - Food & Agro-processing
  - Infrastructure (power and transportation)
- Over 8,500 employees & turnover >US\$150m p.a

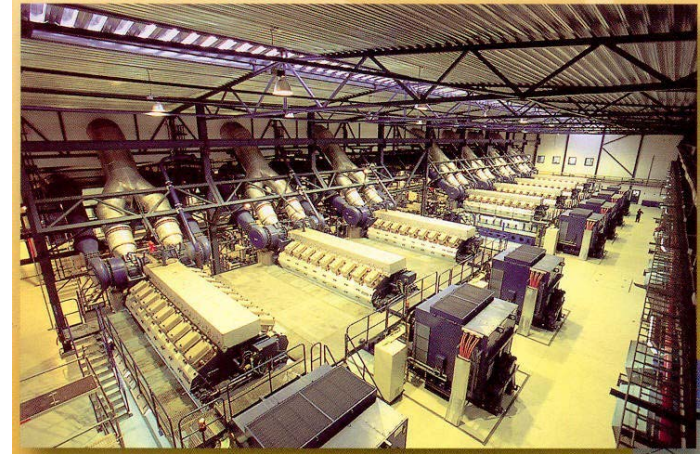
# Guiding Principles

- AKFED's Guiding philosophy
  - In tandem with government policy
  - Investment criteria
    - Meet developmental objective
    - Profitable
- AKFED: Local Partner with international outlook
  - Knowledge of local conditions
  - International outlook
    - Extensive project experience & contacts
    - Vital link with expertise and capital
  - Has confidence of intl. investors/lenders
    - Hence catalytic role – enhances profile of countries
- Reality check - Infrastructure

# Traditional Infrastructure (1)



- Tsavo Power Company, Kenya
  - Owns 75 MW Kipevu II plant
    - US\$86m investment - 20yr PPA
  - Investors
    - IPS-Cinergy JV own 49.9% equity in TPC
    - Other investor – CDC, Wartsila & IFC
  - Lenders
    - incl. IFC, DEG & CDC Capital
  - Special features
    - No government guarantee
    - Investment despite donor embargo
    - Tariffs 65% of existing IPP of similar technology



# Traditional Infrastructure (2)

- Azito Energie, Cote d'Ivoire
  - Owns 288 MW Azito
    - US\$225m investment - 20yr PPA
    - 1st unit commissioned in 6 months
  - Investors
    - IPS-AKFED own 23.1% equity in Azito
    - Other investors – ABB, CDC & EDF
  - Lenders
    - incl. IFC, DEG, FMO, ADB & CDC
  - Special features
    - Largest IPP in S-SA
    - Exploits recently discovered natural gas
    - World Bank Partial Risk Guarantee
    - First infrastructure project in S-SA involving commercial banks



# Traditional IPP model Successes



- Achievements of traditional models
  - Increased generation capacity
  - Improved quality of service
  - Increased access to services
  - Only in interconnected networks – levels of access?
- Away from the interconnected networks?
  - Ignored, capacity constraints remain & worsen
  - Access remains very low – backbone lacking
  - Quality deteriorates with time
  - **Rural areas remain energy poor!**

# Rural Electrification - Challenges

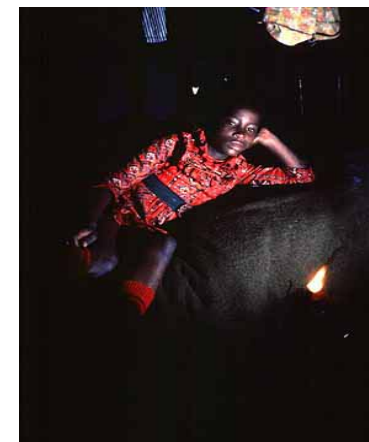


- Challenges of electricity service provision in rural areas
  - Usually poorer, hence affordability issues
  - Existing tariffs very low (subsidized)
  - Extensive networks required due to sparse population
  - Usually commercially unviable – even from government perspective
- Little attention to Rural community – **higher costs – poorer (>US¢55/kWh)**
- Need for rethink?



# Compelling Case for Rethink

- Developmental objectives – increased access
  - Tap economic potential of areas – provide cheaper energy (reduce poverty)
    - Support commercial activities
    - Start-up of agribusinesses and other industries.
  - Improve quality of living – home, schools, health, etc.
  - Environmental benefits
    - Reduce deforestation
    - Improved air quality
- Criteria for success
  - Sustainable business
    - Affordable tariffs & market
    - Expertise & indigenous resources
  - Enabling legal & regulatory environments
- Need to adapt traditional models – **AKFED Leads**



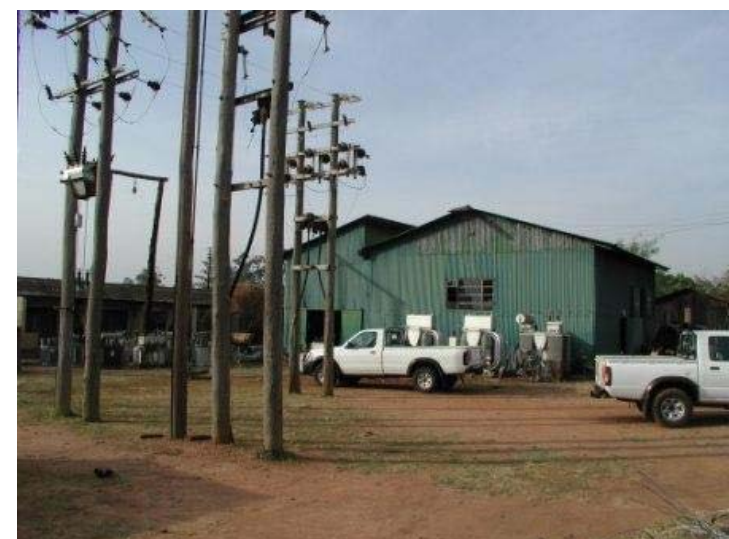
# Pamir Energy Project, Tajikistan

- **Need for Project**
  - Pre-1991 reliance on imported diesel for 60% of energy
    - Very low tariffs <US¢1/kWh
  - Cessation of fuel deliveries
    - 70% tree (incl. fruit) cover depleted
    - Schools/hospitals frequently close in winter (up to -45°C)
    - Dilapidated distribution network
- **Timely intervention**
  - AKFED, with IFC as co-sponsor awarded 25-yr concession
  - Expand gen. capacity and rehab. distribution
- **Salient Features – A first in Central Asia**
  - Project cost US\$26.4m
    - \$5m grant from Switzerland
    - Interest spread over 10-yr on IDA loan
    - AKDN involvement in socio-economic activities
  - Sustainable project



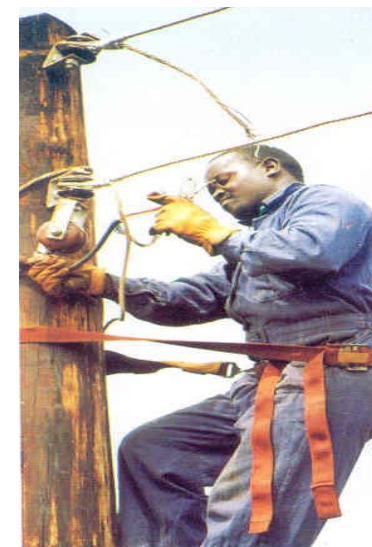
# West Nile RE, Uganda

- Status before Concession
  - Area with huge agro-processing (coffee, tobacco, fruits, etc.) potential
  - 4-hrs electricity supply ( $\approx$ / US¢9/kWh)
  - inadequate
    - 2.8MW private gensets (US¢ 50-55/kWh)
    - Wet/dry cells and paraffin extensively used (up to US¢ 200/kWh)
- GoU intervention
  - ERT Project - support of WB
  - ICB – IPS only bidder of 6 short listed (Investor Apathy)
  - 20-yr concession
    - BOO system to generate, distribute and sell electricity
    - 3.5MW hydro plant main source of power



# West Nile RE - Features

- Salient Features – A first of its kind in Africa
  - Project cost US\$14.75m
    - One-off grant (capital and connections)
    - WB Group purchase of emission reductions
      - ◆ 1st in Africa
  - Enabling legal & regulatory framework (tariff reforms)
  - Guaranteed returns (min 15%)
  - Affordable & Sustainable



# West Nile RE – Post April 2003 (1)



- Current Status
  - 1.5 MW HFO plant in operation
  - 18-24 hours supply reliably
    - National grid?
  - Over 1,750 Customers (All metered), (from 1,100)
  - Demand management to avert spiky peak
  - Gazetted Tariffs in application
    - Involvement of ERA
    - Adjustment factors (fuel/forex/inflation)
  - Construction of 3.5MW hydro plant about to start

- Impacts to date
  - Significant reduction in monthly energy costs
    - NW&SC paid Ugx.15-18m for own generation, now only Ugx.5-6m in elec. bill
    - Arua Hospital, Ugx.5-7m in self generation, now only Ugx.2m
  - Over 600 new connections, 800 being processed
  - Cleaner and safer sources of energy
  - Improved education and health service provision
    - Schools connected
    - Hospitals connected
  - Increased commercial/industrial activities
    - Posho mills converting from diesel to electricity
    - Agro-processing start-ups

# West Nile RE - Challenges

## Challenges

- State of repair of assets – dilapidated & cannibalized
- Poor record keeping, no. of meters, customers, etc.
- Public expectations – need to be managed
- Way leaves and land issues – myriad legal suits
- Logistical problems – remoteness/availability of parts/fuel
- Ability to attract right caliber of manpower – due to location
- Inaccurate market forecast
- Capacity constraints & inadequate institutional set up
- Non-payment of bills, incl. government depts.
- Attracting technical partner for small projects

# West Nile RE – Key Lessons

- Swift transition critical
- Government best to handle way leave & land issues
- Logistical problems must not be underrated
- Studies to be validated by prospective operator
- Lack of local capacity is a huge barrier
- Traditional sponsor apathy
  - Ex-leaders - AES, Enron, Cinergy, EDF, Eskom etc. gone
  - Emergence of new type of sponsors – different investment philosophy (defined by tenure, core activity, etc.)
    - Fund based
    - Equipment manufacturer/supplier
    - Donor supported development companies, e.g. InfraCo
- Clear role for local sponsor

# West Nile RE – Conclusions



- Traditional IPP models
  - Useful – increase capacity, improve QoS and enhance access
  - Do not address rural population needs
- Need New models to address RE
- New models based on collaboration
  - Multilateral/bilateral agencies and donors
  - Governments
  - Private sector
- Nimble decision making required & results incl.
  - Efficient, sustainable infrastructure service delivery
  - Economic potential of rural area realized
  - Improved quality of life
- IPS/AKFED plays catalytic role