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Africa Rural and Renewable Energy Initiative (AFRREI)



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AFRREI Links to Client Countries' Agenda

- **Rural poverty reduction**
 - **Non-farm income generation and job creation via SMEs and agro-processing**
- **Improve rural quality of life**
 - **Facilitate health and education services, which benefit even those who cannot afford electricity**
- **Develop renewable energy as appropriate**
 - **Local resource whose development also protects global environment**

Uganda

- **Ten-year, three-phase Energy for Rural Transformation program**
 - **Phase 1 (4 years): Limited transactions with framework building**
 - **Phase 2 (3 years): Undertake transactions within framework**
 - **Phase 3 (3 years): Take-off phase**
- **Focus on rural transformation**
 - **Increase in rural non-farm incomes**
 - **Improvement in quality of life**

Multi-sectoral Approach

- **Project includes energy and ICT components**
 - **Supply-side synergy: ICT needs electricity to provide service**
 - **Demand-side synergy: development impact of electricity + ICT greater than each individual part.**
 - **Implementation synergy: economies of scope - in terms of preparation and supervision costs - from including a relatively small ICT component in the proposed project**

Cross-sectoral Approach

- **Project links energy and ICT to end-user sectors**
 - **Health, Agriculture, Education, Water, SME's**
 - **End-user sectors are clients for energy and ICT's**
 - **Find niche where energy and ICT's are high-priority**
 - **Energy/ICT suppliers to be paid in full; grant support for end-user sectors**

Reaching poorer segments

- Direct benefits for those actually connected
- Indirect benefits key **to reaching** the rest
 - Health/education/water benefit even those who cannot afford electricity
 - “Public” telecoms - cellular, phone booth, MCT, cyber-café - open possibilities on pay-per-use basis
 - Jobs/incomes generated in SMEs/agro-processing also spread benefits

What is ICT?

Telecommunications



*Information
Technology*

*Other Business Services
Community Broadcasting*



Benefits of ICT in rural areas

- ***Direct benefits***—trips avoided as a result of telecommunications
 - **entrepreneurs**
 - **public officials**
 - **hospitals**
 - **schools**
- ***Indirect benefits***—opportunities gained due to communications
 - **market information**
 - **health information**
 - **education materials**
 - **retaining staff**
 - **family life**

A significant portion of the budgets of enterprises and institutions go on journeys related to the relying of messages

Uganda: how is it done?

■ Grass roots

- visit to electrification project sites
- discussions with local stakeholders
- assessment of existing ICT facilities
- identification of benefits of improved ICT

■ High level

- liaison with ICT policy makers
- review of universal access programs
- review of national ICT strategy
- identification of suitable channels

Uganda: ICT status and trends

■ Status

- **Post Office ubiquitous but ineffectual**
- **Some institutions have radio call**
- **Satellite telephones in disuse (\$1-\$3/min.)**
- **Faxes affected by lack of reliable power**
- **Internet virtually unheard of**



■ Trends

- **Wireless telephones reaching rural areas - tripling teledensity within 2 years of reform**
- **Cybercafes and donor-funded telecenters springing-up primarily in urban centers**

Accelerated access strategy

- **Commercially non-viable areas to be subsidized**
 - **About 15-40% of sub-counties likely to qualify**
 - **Competitively bid 'minimum subsidy' model will be used**
- **Targets**
 - **Every Ugandan within 10 km of public telephone**
 - **Local Internet dial-up in district capitals**
 - **Selected telecenters in deep-rural areas**
- **Subsidy required**
 - **\$12 million over 4 years -IDA credit of \$ 5 million**

Uganda: pilot telecenters

- ***Kisiizi***—small town grown-up around mission hospital
- ***West Nile***
 - ***Arua***—district capital with numerous schools and colleges
 - ***Paidha***—vibrant trading center on export route from Congo to Mombassa



Voices of the poor: Energy & Health

■ *“We lose mothers because we cannot perform operations at night.”*

Secretary for Health, Gulu District

■ *“We fear to go to the health unit at night, it is scary and dangerous.”*

Focus Group Discussion, Kabale District

■ *“Health workers do not want to stay in rural areas where there facilities like water, electricity and schools for their children are not available. Without electricity, it is difficult to retain staff and the attrition rate is high.”*

Administrator, Rukungiri district

Energy/ICTs links to Health

- **Increased access to energy/ICTs needed to implement Uganda National Minimum Health Care Package (UNMHCP)**
- **Women and children in particular will benefit from the improved energy supply - since they carry the brunt of the burden of ill-health.**
- **In individual situations factors other than energy and ICT may have higher priority**



Modular packages

Group 1

Lighting

Sterilization

Cold Chain

Group 2

Medical Equipment

Water Supply

Communication

Group 3

Water Purification

Water Heating

Audio Visual

Cooking

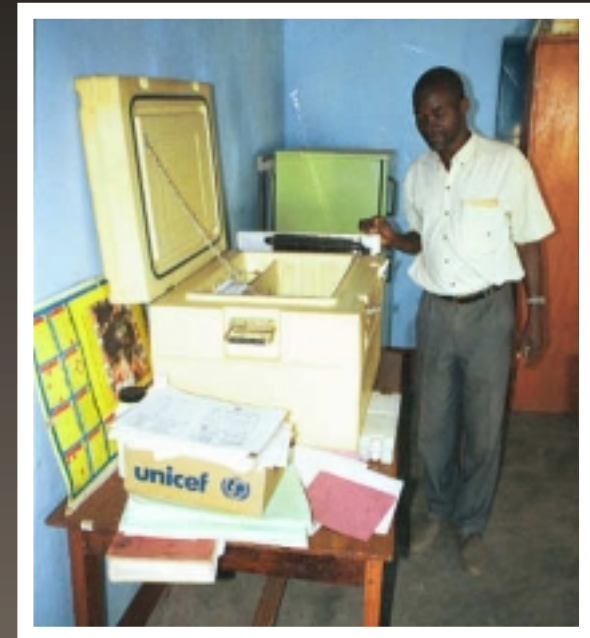
Impact of Energy/ICT Provision: Examples

- Lighting
 - Lab services, microscopes, night time deliveries
- Sterilization
- Cold chain
- Tele-medicine, radio-call for maternal delivery



Implementation Approach

- **Integrated part of health sector strategy, not as an energy/ICT sector plan**
- **Systems to be maintained by energy professionals, not health professionals**
- **Providers to be paid in full; donor funds needed to cover affordability gap.**



Proposed Energy Packages - for each level of HC

Indicative Energy Packages				
		HC II	HC III	HC IV
Lighting				
Basic General Lighting in:	OPD/Staff houses	X	X	X
	Gen. Ward/Laboratory/Clinical Officers house		X	X
	Doctors House			X
Basic Security lighting	OPD/Staff houses	X	X	X
	Gen. Ward/Laboratory/Clinical Officers house		X	X
	Doctors House			X
Examination Lights			X	X
Lighting in Laboratory			X	X
Lighting in Operation Theatre				X
Cold Chain				
Solar PV vaccine fridge		X	X	X
Solar General purpose fridge			X	X
Solar Blood fridge				X
Water Heating				
Solar Water Heater			X	X
Communication				
HF-Radio communication				X
Audio-visual				
TV/VCR				X
Capacity for running 2 TV/VCR, 2 Radios + Computer at staff quarters				X

Scope of Phase 1

Coverage of Energy-Health component in Phase 1

	HC IV	HC III	HC II	Total
First year	2	10	10	22
Second year	4	20	20	44
Third year	6	30	20	56
Fourth year	8	40	30	78
Total	20	100	80	200

Expected to improve health care service for 4.2 mill. in 10 districts for the price of \$ 4.1 million

For less than \$1/per capita over four years the benefit of energy in rural health facilities can be achieved