Safaricom's Community Power Projects

GSMA – Green Power for Mobile (GPM) 7th Working Group Workshop

Sarova Whitesands – Mombasa – Kenya

15th – 16th March 2011

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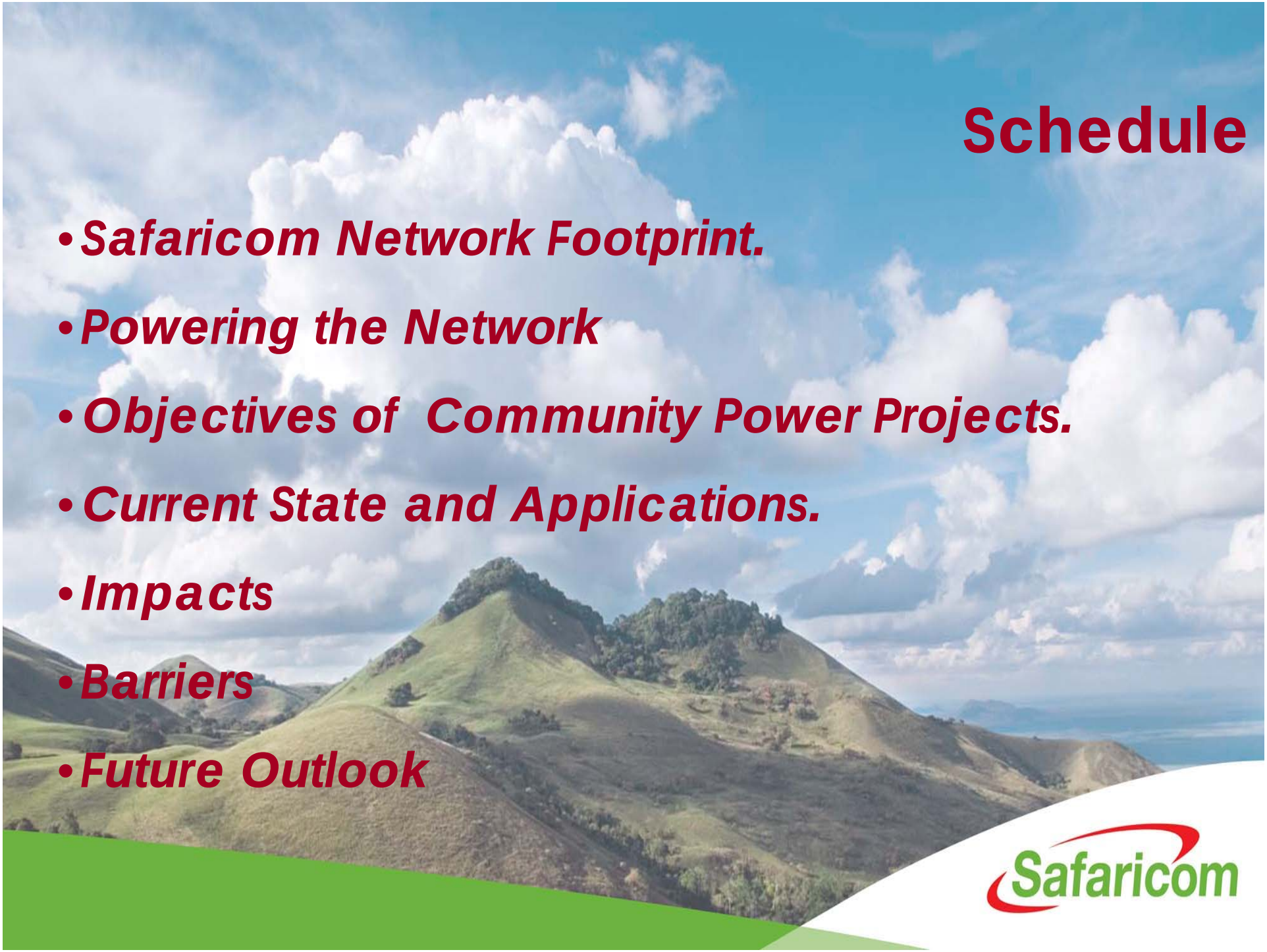

Schedule

- *Safaricom Network Footprint.*
- *Powering the Network*
- *Objectives of Community Power Projects.*
- *Current State and Applications.*
- *Impacts*
- *Barriers*
- *Future Outlook*

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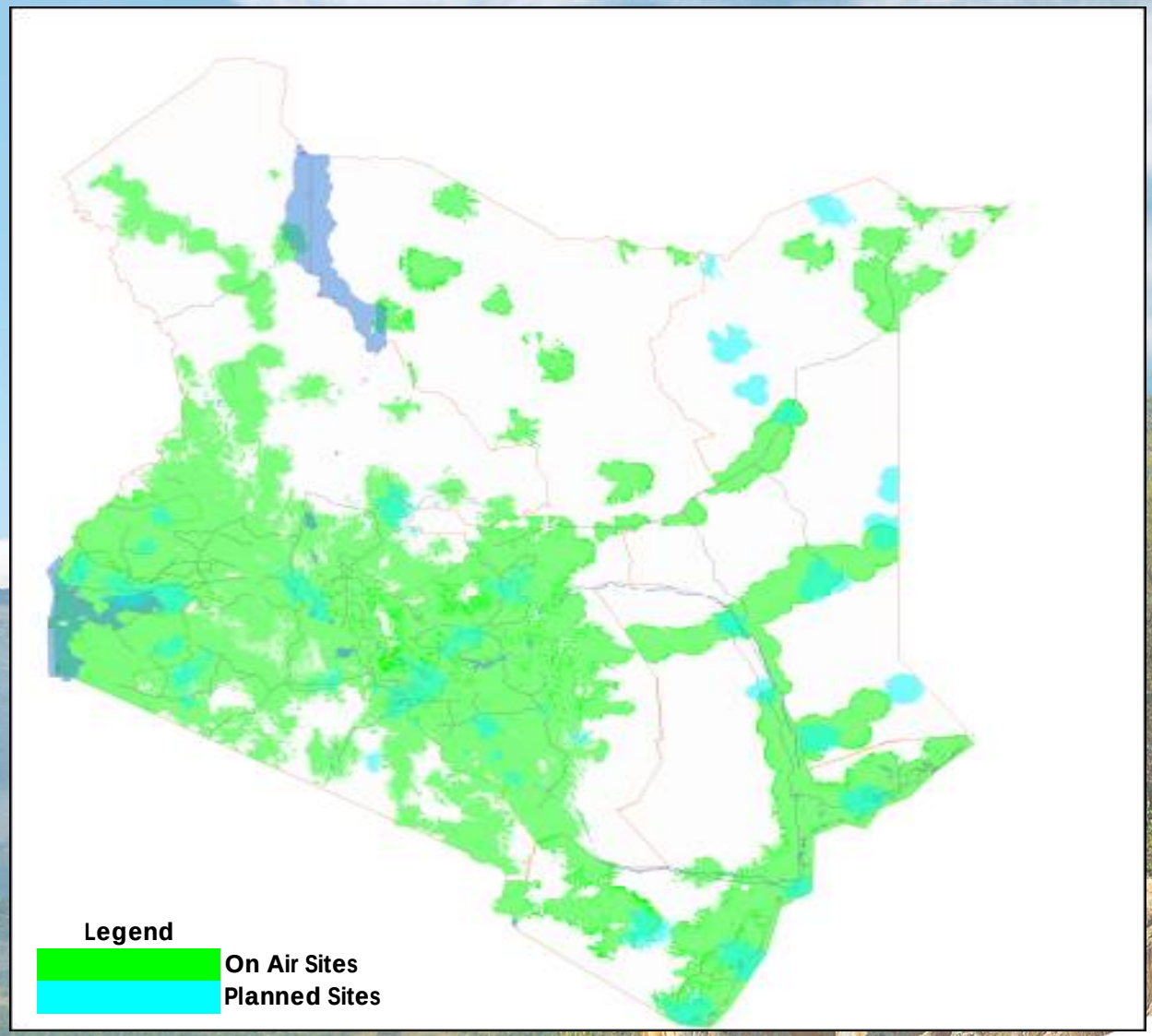
Network Footprint



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Powering the Network

- *Safaricom has 2,167 sites on grid power supply, 235 sites on 24/7 diesel generator power and 83 sites on Remote Power Solutions (RPS) a mix of Solar-Wind-Diesel-battery hybrid.*
- *Safaricom contributes to community power indirectly by extending the grid infrastructure with own resources up to sites within 6 km radius from existing grid infrastructure.*
- *Safaricom also contributes directly by providing community power applications with excess power from the base stations (at time deliberate power system over-specification) meeting 100% of cost.*
- *Rural population is poor and can ill-afford cost of power.*

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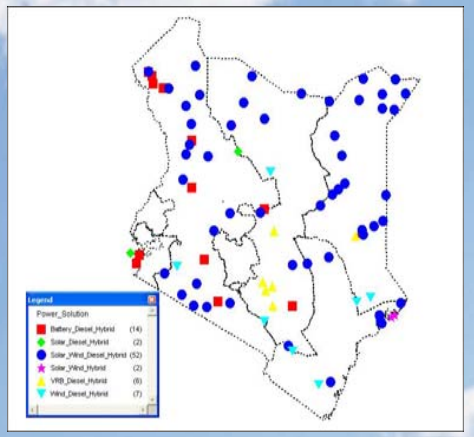
- Solar_Wind_Diesel Hybrid.
- Pure Green Power (Solar_Wind Hybrid).
- Wind_Diesel_Hybrid
- Diesel_Generator


Konyao




Olisirua


Osopuko


North Horr


Laisamis


Sololo


Morua Nachok

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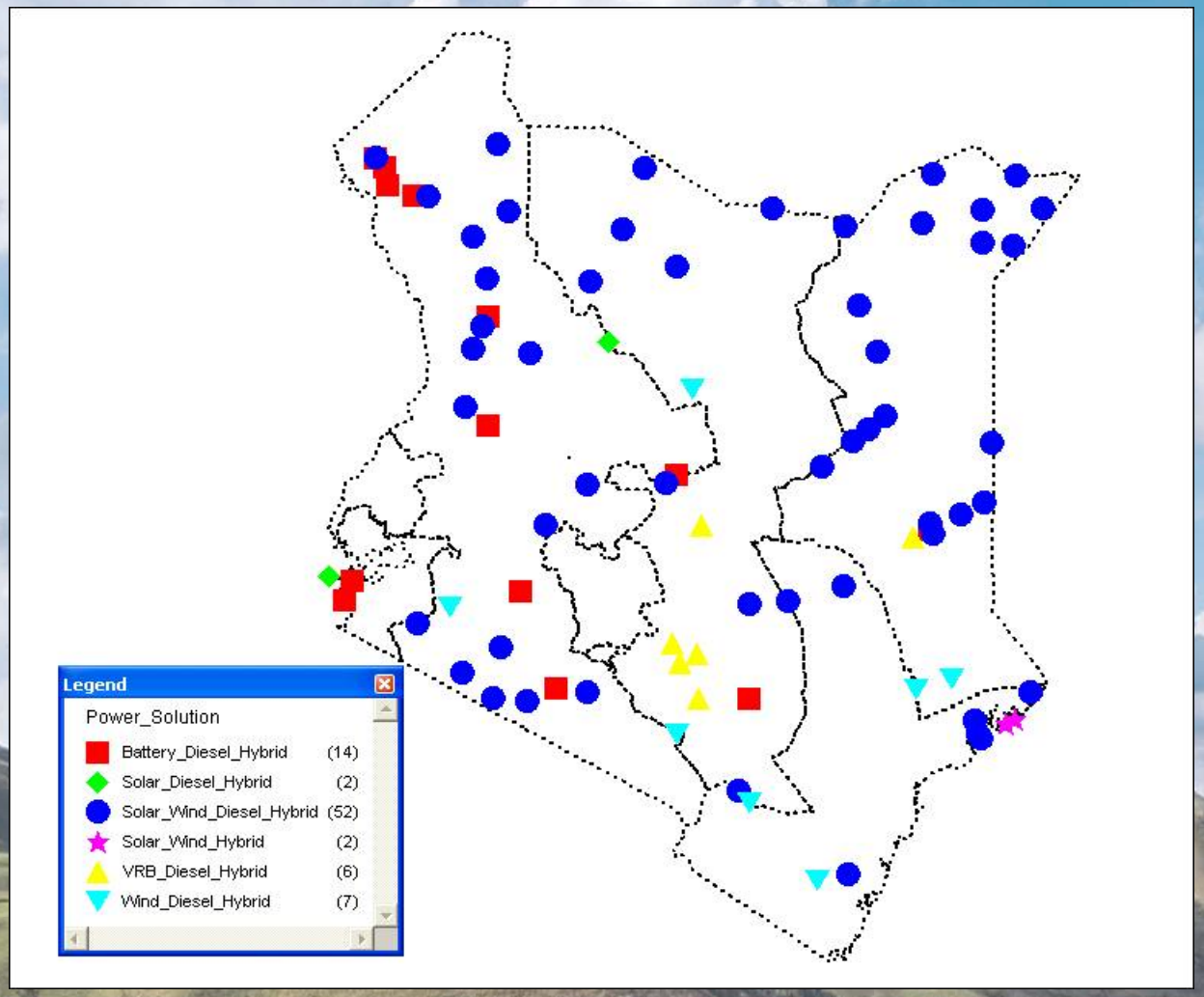
Green Power Sites



Green Power Mix

#	Power Source Category	No. of Sites
1	Solar_Wind_Hybrid (Pure Green)	2
2	Solar_Diesel_Hybrid	2
3	Solar_Wind_Diesel_Hybrid	52
4	Wind_Diesel_Hybrid	7
5	Battery_Diesel_Hybrid	14
6	VRB_Diesel_Hybrid	6
	Total Number of sites on RPS	**83**
	Number of Sites on Air	**2485**
	% of Green Power Sites	**3.34%**

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Community Power Projects - Objectives

- *Slow pace of electricity infrastructure penetration in rural areas.*
- *Excess power from the base station.*
- *Network access expansion in off-grid rural areas.*
- *CSR – empowering the community /subscriber*

- *Site security especially in hostile areas..*
- *Increased (ARPU) due to availability of power for mobile phone charging and also from resultant economic stimulation from small businesses due to the project.*
- *Brand Image and subscriber loyalty*

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Community Power Projects - Objectives

- *Poor local community, cannot afford cost of power.*
- *Request from the community.*
- *Request from donors engaged with the community in other development projects.*

- *Rapid expansion of Mobile Money MPESA services to the rural areas.*
- *Optimum network utilization and improved Rate of Return (no sleeping cells) for lack of subscriber activity.*

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Current State and Applications

#	Community Power Application	Power Source	No. of Sites
1	Water Pumping	Diesel Generator	1
2	Community Computer Project	Pure Green (Solar_Wind Hybrid)	2
3	Mobile Charging Booths	Battery_Diesel Generator	4
		VRB_Diesel Generator	1
		Solar_Wind_Diesel_Hybrid	14
		Wind_Diesel_Hybrid	1
		Solar_Diesel_Hybrid	1
		Pure Green (Solar_Wind Hybrid)	2
4	Street Lighting	Diesel Generator	2
5	Hospital Facility	Diesel Generator	1
6	Sockets and Lighting to Community	Diesel Generator	4
7	Security Surveillance Radio	Solar_Wind_Diesel_Hybrid	1
	Total Number of sites Supported		**25**
	Number of Sites on Air		**2485**
	% of Community Power Sites		**1.01%**

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Current Status

- ***Street-lights and mobile charging booth in one of the community power site.***

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Current Status

- ***School lighting and socket power (computer lab).***

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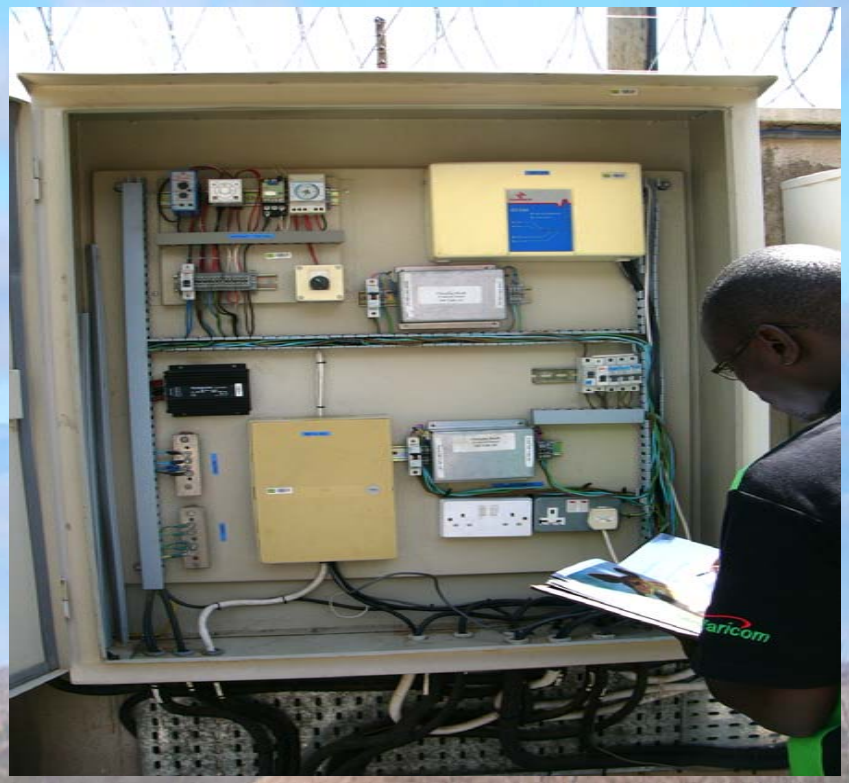
Current Status



- ***Mobile phone charging facility – power output regulated via a 16Apms CB.***

Community Power Project Costs

#	Additional Equipment & Infrastructure Requirement for Community Project	Total CAPEX Cost (USD)	Total OPEX Cost (USD) pa	OPEX Items
1	11kVA Extra Genset Power	65,160.00	44,948.07	Extra Cost of Diesel
2	Street Lighting Infrastructure	50,820.44	694.10	250watts bulbs replacement.
3	Mobile Charging Booth	85,512.82	10,738.46	Booth repair costs since installation
4	Solar Panel and Inverter Charger for Community Computer Laboratory	14,673.08	2,307.69	Battery replacement cost after 2years
	Total	216,166.33	58,688.32	

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Impact of Community Power

- ***Improvement in local security both for the base station and the community (street-lighting, community engagement).***
- ***Positive brand image and reports to shareholders and to the wider society through association with community power.***
- ***Increased sales amongst conscious customers and a competition edge.***
- ***Expanded access and service giving to rural communities/schools.***
- ***Bridging the digital/information divide through access to information.***
- ***Contribution to local community development; opportunities for entrepreneurs/vendors and extended business hours (MDG goals).***
- ***Improved social cohesion and peaceful coexistence amongst communities and clans with warring cultures (cattle raids, inter-clan wars e.t.c).***

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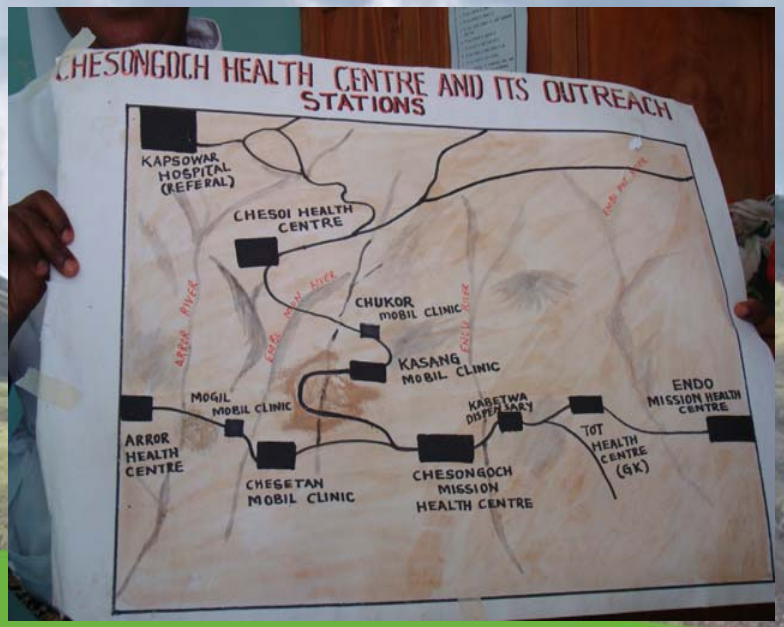
Social Impact

- **Improved healthcare, inter-community cohesion, access to communication, improved standard of living.**



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Barriers

- ***High CAPEX and OPEX costs to implement and sustain power sources to allow for community power applications. Decommissioning of power infrastructure on connection of national grid power.***

- ***Non-Core business activity; administrative challenges in implementation and maintenance of community power applications.***

- ***Lack of local maintenance/technical expertise to offer first level support.***

- ***Managing Community Expectations;***
  - ***Expectation of reliable, uninterrupted, and quality power to local community power applications.***
  - ***Demand for more services once basic needs are provided.***

- ***Local community increased reliance to the provided community power even when grid power is finally connected to the area (poor communities).***

- ***Technical, Cultural and Regulatory barriers to implementation.***

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Barriers

- Requirement by local community for power supply to a community school for the handicapped, water pumping, Government Security camp e.t.c.

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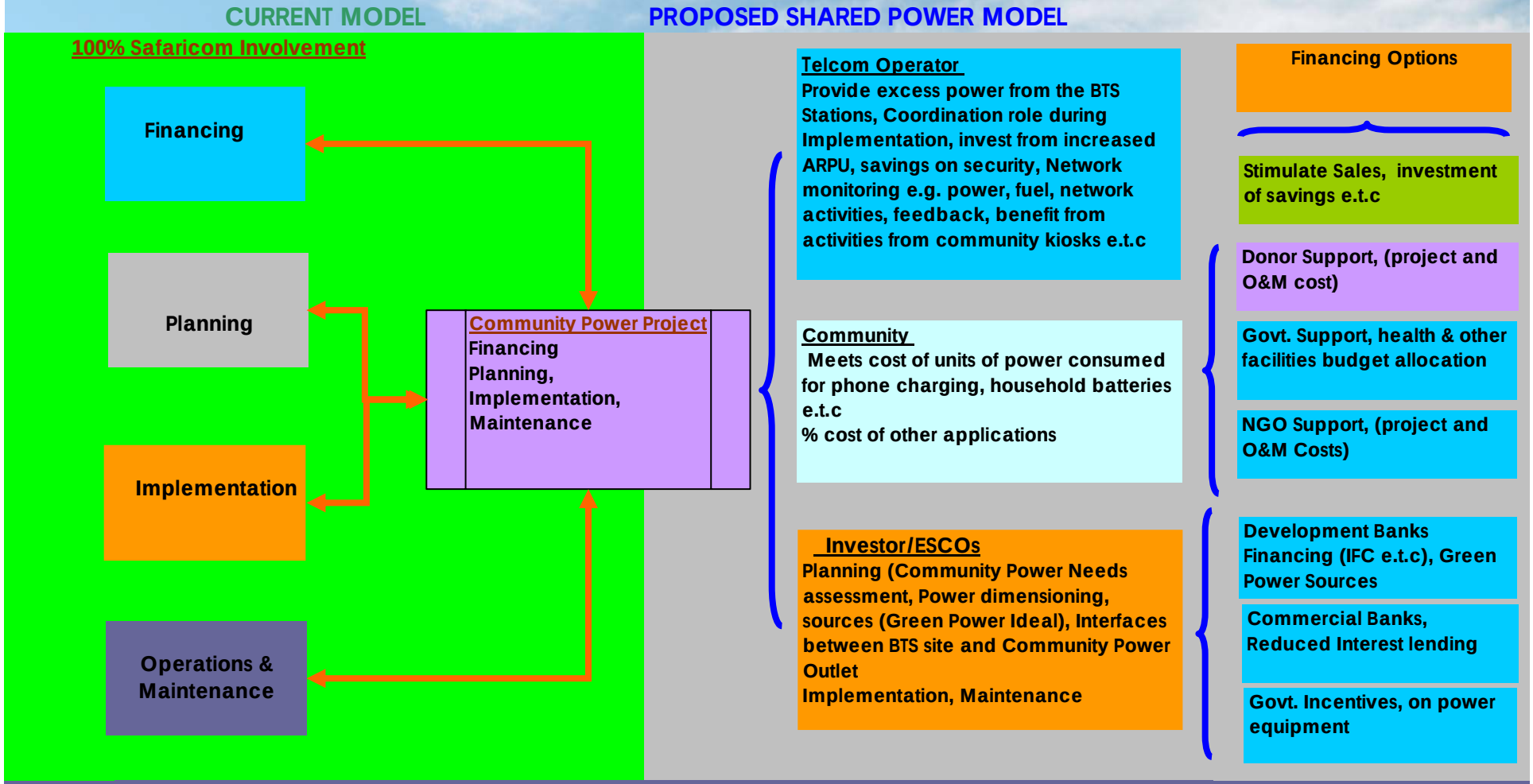
Possible Community Power for Mobile Models



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Future Outlook

- **Safaricom Expectations;**
- ***Provide excess power to the investor (partner) with the power interface unit.***
- ***Coordinate implementation.***
- ***Invest into the project from Returns Accrued;***
    - ***Expected increased ARPU.***
    - ***Savings from Security, Network Monitoring of power, fuel, network usage e.t.c.***
    - ***Community kiosk to serve as a local customer service shop offering airtime, sales of other merchandise; phones, modems, MPESA e.t.c.***
    - ***Source of customer feedback on network quality, outages e.t.c***
- ***Develop the partner to a stand-alone level capable of providing power to Safaricom and the community.***

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Thank You
Niko na Safaricom