Green Power for Cell Sites

Progress in Zantel Network
Tanzania

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Issuing of RFP for 231 Cell Sites

Major criteria of site selection

- MW Backbone and Hub Sites
  - For Higher Reliability and Longer Autonomy (60+Hrs)
  - Opex saving as secondary objective on Off Grid Sites

- Off Grid Sites (with two Diesel Generators in Operation)
  - For Opex Saving and reducing the Carbon footprint of the company – Annual Opex per off-grid site is USD 35,000.

The capacity of the Sites are Ranging from 1.2 to 8.2kW

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Feasibility Study with GSMA

- Kick-off Meeting on 25th of June 2009
- Started Evaluation of responses for the RFP and Data gathering for the feasibility Study.
- Start working on Feasibility study with GSMA project Manager Mr. Areef Kassam on 24th August

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Re-Grouping of Sites

- Based on,
  - The actual load capacity of the site
  - Location / Geographical Area of the site



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Sample Site analysis Using HOMER

- Example

Site Equipment	
BTS (Outdoor)	2.5kW
MW	0.3kW
Generator	2 x 22kVA
Rectifier	8.4 kW

Recommendation for Renewable	
PV Array	1.38kW
Wind Turbine	6 kW
Generator	1 x 22kVA
Rectifier	14.4 kW upgrade
Battery Bank	1200 AH

Contribution to Energy	
PV Array:	12%
Wind Turbine:	57%
Diesel Generator:	31%

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Key Findings - Feasibility Study

- Areas with high wind speeds (Average < 5ms) have better results
- Wind power has a higher impact on renewable fraction
- Selecting a better performance wind turbine is a challenge
- Weather changes dramatically even in the same geographical region so that the individual site survey need to be done
- Sites with high power demand (>3.3kW) and located at low wind/solar resourced areas are giving lower ROI (>3Years)
- The payback periods range in between 1.75Years and 5.6Years
- Majority of sites come between 2 & 3 Years period

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THANK YOU!



