USING ALTERNATIVE ENERGY TECHNOLOGIES AND STRATEGIES TO DELIVER SERVICES TO UNPROCLAIMED URBAN INFORMAL SETTLEMENTS
Presentation Outline

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Presentation Outline

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Background Statistics

- 10% of South Africa’s 51 million people live in un-proclaimed urban informal settlements.

- In May 2010, housing backlog of 2.1 million housing units, affecting 12 million people in 2700 informal settlements.

- This housing backlog continues to grow despite the delivery of 2.7 million subsidized houses in the past 18 years.

- Informal settlements have growth at 4% per annum, in line with urbanization trends.
Introduction
Illegal Connections
High/Low Choice for Informal Settlements

The basic factors to when evaluating an informal settlement are:

- Settlement layout and population density
- Drainage and flooding risk
- Relocation timeframes
Constitution of South Africa requires that all citizens have a right to basic services, the health and safety of individuals and communities is also a basic human right.
Overcrowding and lack of access for emergency vehicles increases the risks of any disaster management....
For many of these communities it is necessary to consider alternative technologies, which will:

- Provide poverty relief and lifestyle improvements through the use of low voltage systems, and
- Provide lighting, cell phone charging and can also power radios, television sets and other small appliances.
Where the relocation of the community is uncertain it is prudent to provide solutions that require less expensive infrastructure and are easily relocated if required.
Advantages of low voltage

- Inexpensive upfront cost
- No running costs
- Fewer hazards
- Easy to use
- Minimal/no installation
- Energy efficient technology
- Quality output
Challenge remains:

“How can we get these communities to accept these alternative off-grid technologies when they may perceive these to be less attractive than traditional grid services that are available to the rest of the population?”
The solution we believe lies in a three-pronged approach:

- Exciting product design offering compelling lifestyle choices.
- Communications strategies to correct consumer perceptions of these technologies.
- A pay-as-you-go financing model that makes this technology affordable for consumers and service providers alike.
Technology Choices

For informal settlements

- low voltage systems are the answer.
- solar photovoltaic (PV) provides the most suitable recharging source.
- but requires supplementary energy solutions that provide for the consumers’ thermal needs, such as Liquid Petroleum Gas (LPG).
Department of Energy on Integrated Energy Plan

“This will incorporate grid electricity, solar water heating and LPGas for formal dwellings, **while informal settlements will be directed towards LPGas for thermal needs, as well as a [solar photovoltaic] technology solution for lighting and [low] power [use].**”
Community and Consumer Perceptions

□ All-important community buy-in!
Three common misperceptions:

1. PV solutions are an inferior alternative.
2. PV is only good for lighting and cell phone charging.
3. If the community accepts any PV they will never get a 220V grid connection.
Community and Consumer Perceptions

We believe this can be attributed to Correcting this perception is to ensure that the products:

- look good,
- have a long lifespan, and
- performance exceeds the consumer’s expectations.
Community and Consumer Perceptions
Pilot Project Strategic Considerations

The following are all important considerations:

- Selecting the best locations.
- Community communication and liaison.
- Products Selection
- Execution Partners
- Test Scale
Financial Considerations

The costs of providing safe grid connections to these communities include:

- The upgrading of infrastructure such as drainage and roads
- Relocating some of the existing houses to provide emergency vehicle access
- Grid extensions and additional transformers

When considering the above costs it must be remembered that some of these communities will be earmarked for relocation and thus these costs may be wasted in the short or medium term.
PAY-AS-YOU-GO SYSTEMS
A results-based finance program should have five main principles:

- **Fund Services, Not Watts**
  An inefficient 100 watt system and an efficient 35 watt system can deliver exactly the same service level.

- **Fund Durability**
  Technical analysis can identify high quality systems and reward the investment in quality.

- **Build a broad market**
  Competition should be built into the process as this will ensure that ongoing technology improvements which be for the benefit of all concerned.

- **Only Fund on Auditable Data**

- **Release Funding Quickly and Transparently**
Financial Considerations

Ikhayalami and Energy One Pilot

Source: Ikhayalami and Energy One Pilot
The challenges facing the delivery of electricity to informal settlements are enormous, but there is hope!

In many instances low voltage DC solutions are the only safe options and in many more cases financial considerations make these options attractive.

Pilot Projects:

- Select the correct products carefully and test these for design, quality and performance.
- Test the products in a carefully monitored and prepared pilot projects.
- Carefully consider and test payment systems to ensure efficient and cost effective revenue possibilities.
- Conduct a comprehensive communications campaign.
Questions and Comments