

Session 5.1

**South Africa: SHS Concessionaires: Kwazulu
Energy Services and NuRa (Pty) Ltd**

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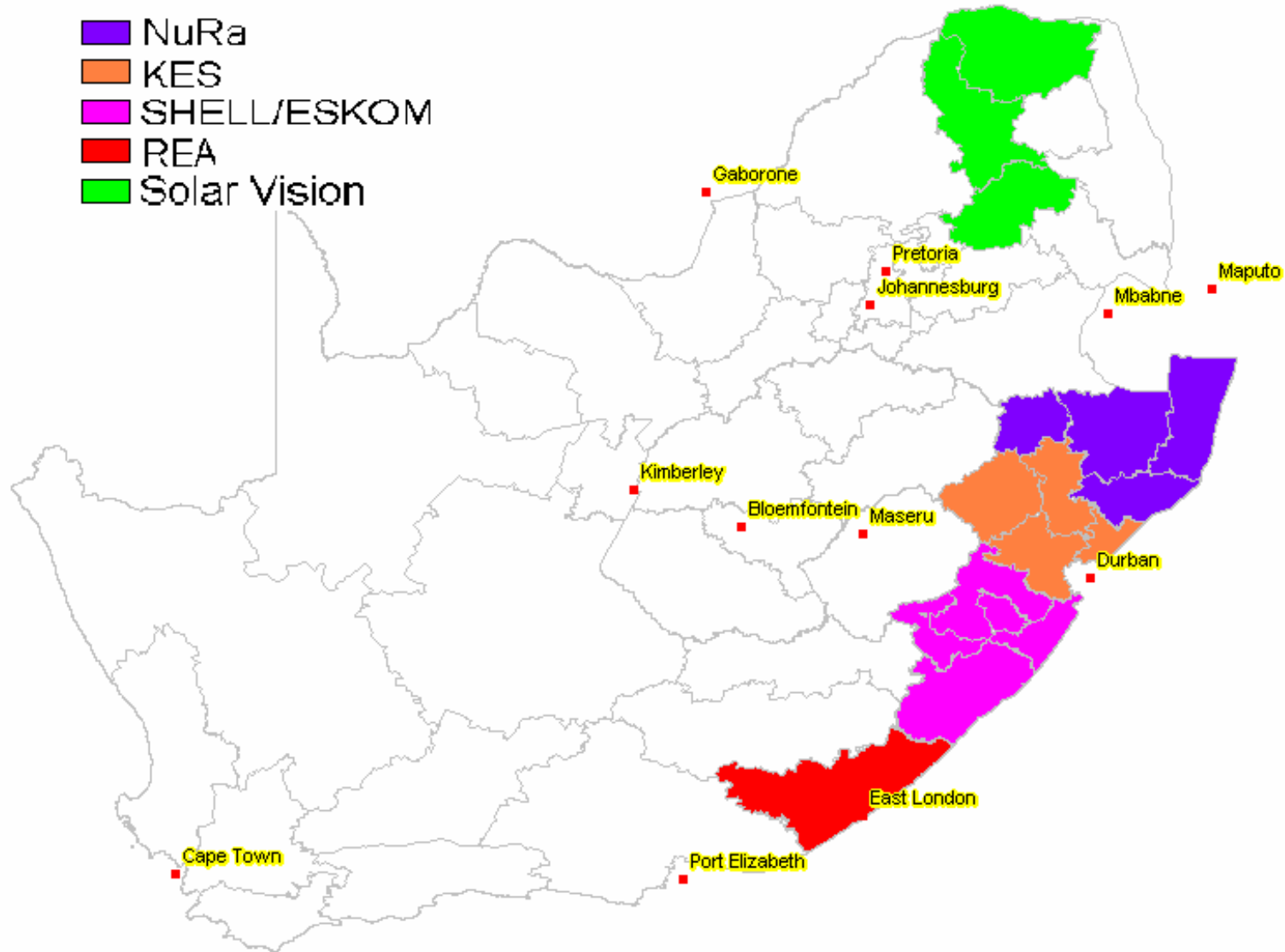


- KWAZULU ENERGY SERVICES (KES) – Joint Venture between EDF and Total Energie
- NURA (PTY) LTD – Joint Venture between NUON (Dutch Power Utility) and RAPS (South African Company)
- RAPS Technologies (Pty) Ltd – Prepaid and Management System Supplier to both KES, NuRa (and Solar Vision)

- South African Government driven SHS program initiated in 1999
- Initial target was 300 000 homes to be provided with individual solar home systems.
- State capital subsidy of almost 100% of system installation cost.
- After tender procedure interim contracts were issued in 2001/2002 as follows:

Background (continued...)

- NuRa
- KES
- SHELL/ESKOM
- REA
- Solar Vision

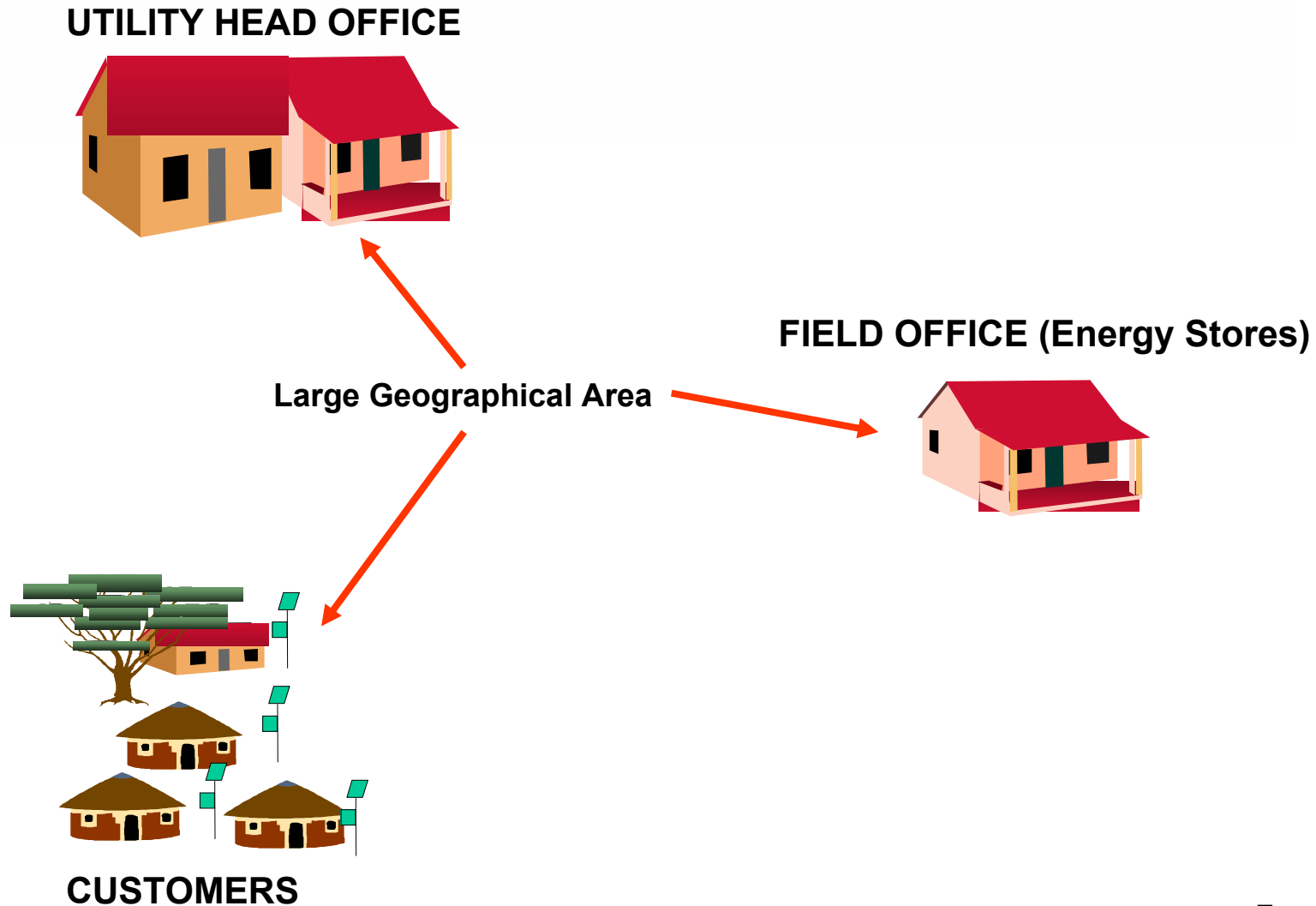


- SA Government preferred a Fee-for-Service delivery model.
- WHY? – State subsidizes the system installation with a capital subsidy of R 3500 per SHS (almost 100%) so they wanted to ensure their investment was protected ie that they did not end up with numerous inactive systems after a few years.
- WHAT IS FEE-FOR-SERVICE? – the customer pays a fixed monthly service fee (R60 – USD 10) and in exchange, their system is then maintained free of charge.

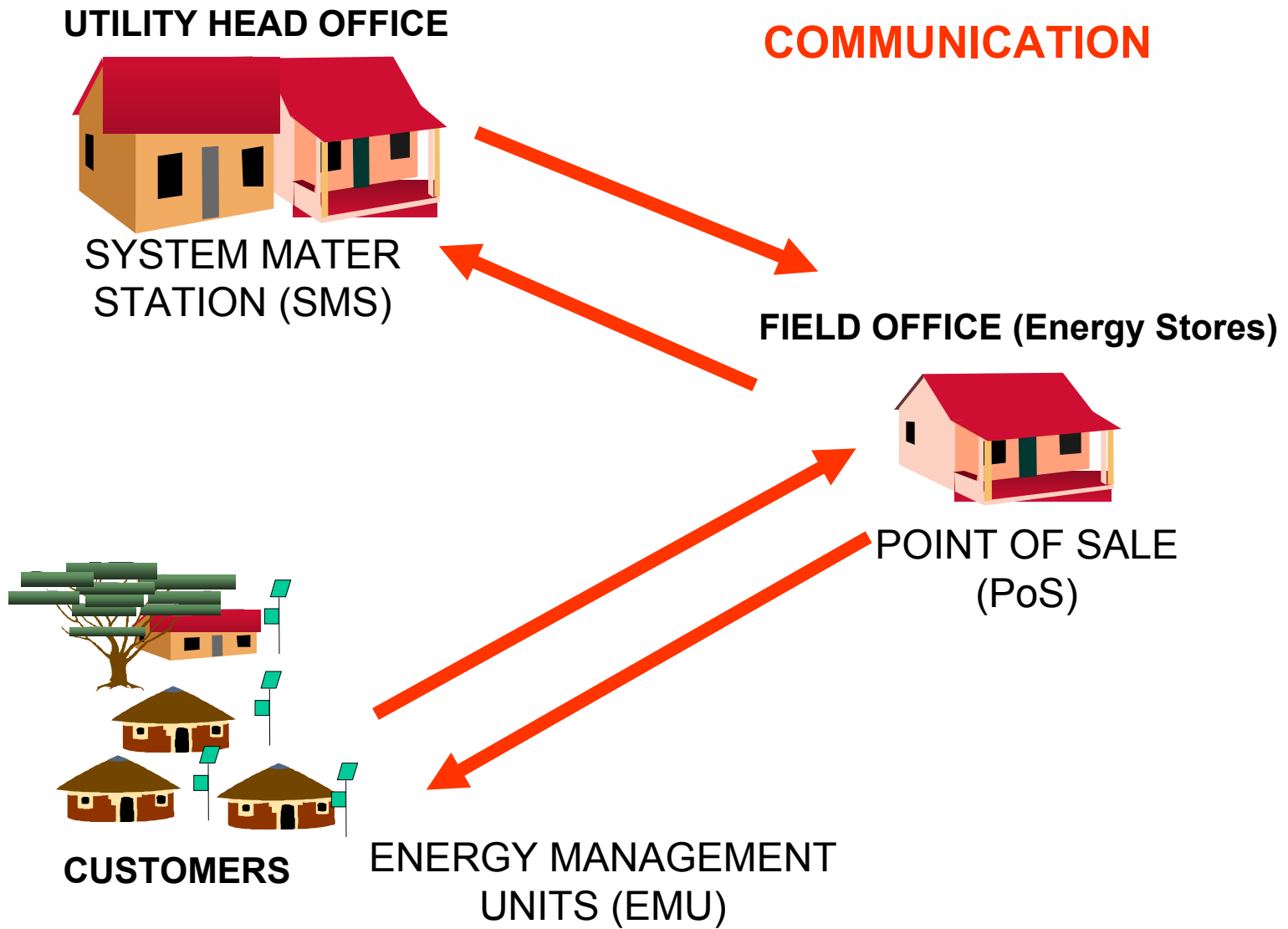
- SHS specification was that the system should supply the customer with enough power to run 4 CFL lamps and a black and white TV for approximately 4 hours per day.
- Basic specification chosen was:
 - 50/55 Wp Panel
 - 100 Ah Battery (Lead Acid)
 - 4 Lights, 3 internal, 1 external, 7-9 W CFL.
- Both KES and NuRa chose to use the RAPS Technologies ENERGY Stream Prepaid and Management System.

TECHNOLOGY (continued...)

THE ENERGYStream SYSTEM



TECHNOLOGY (continued...)



- Energy Stores are located at major trading centers within the rural areas.
- Major problem is that these are often up to 50 km away from the customers.
- Energy Stores handle the following:
 - Solar Credit Sales
 - Applications
 - Customer Complaints
 - Maintenance Planning
 - General Sales ie LPG

- Work very closely with the local municipalities (they are responsible for paying operating subsidies) as well as the electrification planning
- Slight variations to the models used:
 - KES – customer gets pre-approved authority from the local municipality prior to applying at the Energy Store
 - NuRa – customer applies directly at Energy Store
- Customer pays an application fee of R 100 (USD 15).

- Once an application has been approved it is ready for installation.
- Two models have been tried including:
 - Installations done by in-house staff
 - Installations done by external contractors
- External contractors have proved to be the most successful due to better productivity. This model also creates opportunities for local entrepreneurs.

- In the Fee-for-Service model, all maintenance is performed by the utility.
- Company employed technicians are used to perform all maintenance functions.
- Two different models have been employed by KES and NuRa as follows:
 - KES have a bakkie (pickup) that carries up to three technicians.
 - NuRa have allocated each technician with motorbike or quad bike
- Maintenance is the most critical aspect of the utility. NuRa survey on non-payment cited 70% due to lack of maintenance.

- How many Technicians are required?
Approximately 1 per 600 customers. NuRa are targeting 20 technicians for 12000 customers plus two regional technicians (they have a vehicle)
- Breakdown Maintenance – ENERGY Stream allows for all complaints to be logged with a unique fault reference number – very NB!!!
- Planned Maintenance – system should be visited on an annual basis to top up battery water. This is managed by ENERGY Stream.

- The ENERGY Stream suite has full GIS integration included. This allows for improved productivity with job cards being issued geographically. NuRa has noted a 100% increase in productivity using this methodology.

- Non-payment of monthly service fees is the biggest challenge facing the utilities.
- In the past this aspect of the business was initially largely ignored in favor of installation targets.
- Non-payment is a management issue not a technology issue – technology can only alter percentages.
- KES have shown that with concerted management effort, non-payment can be controlled. They have improved payment levels from 77% in January 2005 to 90% in January 2006.

- All data is centrally managed through the ENERGYStream SMS software.
- Both KES and NuRa outsource this function to RAPS Technologies, the developers of the software at a cost per customer (approximate R 2.00 (USD 0.33) per customer per month)
- All control resides here in respect of system setup etc.

- RAPS Technologies is continuing to develop the ENERGYStream suite. New developments include:
 - Modular metering system which allows the client to use any third party charge controller, various different data transfer methods and different customer interfaces.
 - Online management reporting.
 - Remote vending solutions via cell phone.

PHOTOS



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- Fee-for-Service delivery model can work under the correct conditions specifically major capital subsidies.
- When planning at any rural electrification project take specific note of the following:
 - TECHNOLOGY – choose the right technology for the project and the environment.
 - EDUCATION – local communities must be consulted and educated about projects.
 - MANAGEMENT – the success of the project will be defined by how well it is managed.

CONCLUSION (continued...)



- Government support must be constant. Initial targets were undermined due to budget cuts. This had major impact on business models.
- Political support is imperative. Politicians use grid electricity as a bargaining tool which misleads ignorant communities.

THANK YOU