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ASSOCIATION OF MUNICIPAL ELECTRICITY UTILITIES OF SOUTHERN AFRICA

GOOD HOPE BRANCH: WESTERN CAPE

14 NOVEMBER 2014: KNYSNA MUNICIPALITY: SEDGEFIELD

By: Joe Renney



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ELECTRICITY DISTRIBUTION

NETWORK PLANS: R1M – 2014/15

BERGRIVIER MUNICIPALITY
BITOU MUNICIPALITY



Bitou Municipality



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The Changing Landscape in

Electricity Supply.



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In the past, to derive the full
benefits from long term MP,
the focus was always on:

Distributed Generation



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To derive the full benefits from long term MP, the focus must now be on:

Distributed Generation & CO₂.....Coal

Renewable Energy

Intelligent Networks / Smart Grids

Embedded Generation

Other sources Natural Gas.

Non CO₂



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So, if we focus on what has been described, what do we hope to achieve?

- A) Cost effective energy to consumers.
- B) Proper demand management
- c) Energy Efficiency and
- d) Possible fuel source changes.



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The need for MP is for the Municipality to take ownership of an updated MP that forecasts short term (5 year) & long term (10 year) periods.

The MP will support human settlement development and local economic growth.



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OBJECTIVES

To provide a plan that considers:

Satisfies WC Green Economy Frameworks

An integrated model.

Prepare updated asset registers, GIS Data and Network drawings.

To link the plan to asset registers, maintenance registers and organisation design.

Prepare a 20 year geospatial load forecast which integrates with the network data base & spatial Development framework.

To determine refurbishment and replacement needs & include in MP to optimize Capital Funds

Provide a 10 year plan for the growth of the electrical network.

To analyse the network based on electricity demand & associated thermal overloading & voltage profiles.

To prepare costs for technical expansion, refurbishment & strengthening projects

Prepare a 10 year electricity capital investment plan.

Provide a time frame for the developments and to ensure that electricity supply is available to support economic growth and human settlement development.

To engage with all relevant stakeholders.



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Phase 1: Project Inception

The project inception will be dedicated primarily to collecting existing policies & strategies impacting on the MP project.

It will also provide a good understanding of the scope of the project with all stakeholders.



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Phase 2: Gathering information on current network / Asset Register information.

Technical data collection

Studies on network using software

On-site Asset Verification & inspections.

Prepare Asset Registers



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Phase 3: Municipal Growth per Town

Electricity growth statistics

New growth: farming / commercial / industrial

Land use changes

Urbanisation and industrialisation changes in the towns

Economic Growth

Topography that may influence the load forecast

Environmental & heritage factors

Consideration for **energy efficient, DSM, RE and own generation.**



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Phase 4: Electricity Demand Forecasting

Prepare a specific load forecasting model
Estimate future electrical demand



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Phase 5: Prepare Electricity Distribution Network Master Plan.

Develop the Baseline Network model by making use of various software tools.

Prepare the future network model

Finally.....The Study Report



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Project Close-out

Present an integrated

ELECTRICITY DISTRIBUTION NETWORK
PLAN to the Municipality and the PGWC
(DLG)



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Future Projects

The DLG intends extending this ELECTRICITY DISTRIBUTION NETWORK PLAN to all other utilities in the WC between 2015 to 2019.

- 2015: 1) Theewaterskloof Municipality
2) Prince Albert Municipality
3).....? Other interested utilities

Questions ????



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THANK YOU & CHEERS

