



## The Role of Municipalities Challenges and Opportunities




**Nelson Mandela Bay Municipality**  
Electricity and Energy Directorate

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### The role of the Municipality

- NMBM Energy History
- NMBM Energy Consumption
- NMBM Renewable Energy Projects
- Legislation
- Implementation Challenges
- NMBM Experience



### NMBM Energy History

- Electricity and Energy Directorate investigated Renewable options from early 2000's as special projects
- Why was alternative options explored?
  - Expected electricity demand increase (COEGA development, NMBM increase in demand)
  - Foresaw energy crisis – pro-active
  - Environmental concerns

### NMBM Energy History (cont.)

- Integrated Energy Plan (IEP 2004)
  - RE identified as critical focus area – specific potential for Solar and Wind projects
  - Wind energy will be a competitive alternative
  - Solar water heating will be an economical choice
- Mayoral Executive request for exploring renewable energy options - November 2005
- IEP incorporated into IDP - 2006

### NMBM Energy History (cont.)

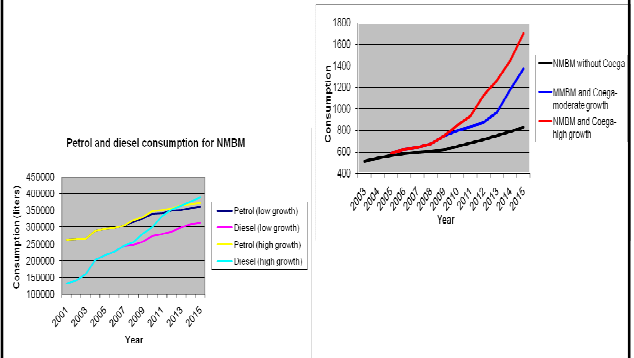
- RFP was advertised - February 2006
- Outcome a basket of renewable projects identified by end of 2006
- Staff allocated on a permanent basis to RE projects – 2006/7
- Started with site identifications, tests and EIA studies in 2006/7
- Different business models explored in 2006 - 08
- Involved universities, NGOs, advisors and potential investors - 2007/8

### NMBM category and consumption figures 2013

Category	GWh 2008/09	Consumption %
Domestic credit	390	11.5%
Domestic prepaid	800	23.5%
Business - Small	100	3%
Business - Medium	450	5%
Business - Large	1 610	55%
Streetlights	45	1.5%
<b>Total</b>	<b>3 395</b>	<b>100%</b>

**LOSSES?**

### NMBM energy consumption predictions



## Legal aspects

**The Constitution in Section 152 states that:**

*The Objects of local government are*

- (a) *to provide democracy and accountable government for local communities*
- (b) *to ensure the provision of services to communities in a sustainable manner*
- (c) *to promote social and economic development*
- (d) *to encourage the involvement of communities and community organisations in the matters of local government"*

## Legal aspects (cont.)

- **The Constitution in Section 156 deals with *Powers and functions of municipalities***

***"(1) A municipality has executive authority in respect of, and has the right to administer - the local government matters listed in Part B of Schedule 4 and Part B of Schedule 5; and any other matter assigned to it by national or provincial legislation.***

*(2) A municipality may make and administer by-laws for the effective administration of the matters which it has the right to administer.*

## Legal aspects (cont.)

*(3) Subject to section 151(4), a by-law that conflicts with national or provincial legislation is invalid. If there is a conflict between a by-law and national or provincial legislation that is inoperative because of a conflict referred to in section 149, the by-law must be regarded as valid for as long as that legislation is inoperative.*

*(4) The national government and provincial governments must assign to a municipality, by agreement and subject to any conditions, the administration of a matter listed in Part A of Schedule 4 or Part A of Schedule 5 which necessarily relates to local government, if - that matter would most effectively be administered locally; and the municipality has the capacity to administer it.*

## Legal aspects (cont.)

- (5) A municipality has the right to exercise any power concerning a matter reasonably necessary for, or incidental to, the effective performance of its functions.***

**Local Government: Municipal Systems Act (32 of 2000) (MSA)** S8 (2) of the Local Government: Municipal Systems Act (32 of 2000) (MSA) states that ***"A municipality has the right to do anything reasonable necessary for, or incidental to, the effective performance of its functions and the exercise of its powers"***

## Legal aspects (cont.)

S 11 of the MSA deals with executive and legislative authority and S11(3) records that a municipality exercises its legislative and executive authority by inter alia ***“promoting and undertaking development, providing municipal services to its local community and promoting a safe and healthy environment”***

**It follows that a municipality has the responsibility, and the powers to ensure that services are provided in a financially and environmentally sustainable manner.**

## NMBM Experience

**The following issues were identified as important to the NMBM RE projects:**

- Conduct an IEP
- Get political support from onset, since various approvals are required,
- Make RE part of IDP,
- Need permanent staff allocated to RE projects,
- Budget for external professional technical, legal and financial expertise,

## NMBM Experience (cont.)

- Secure investors into project(s),
- Clarify if RE will be incorporate into broader electricity mix or supplied to dedicated customers, both have tariff implications to be clarified with NERSA,
- Notify your intentions and projects to DoE, Eskom and NERSA,
- Secure local engineering companies / NGOs / universities / to run pilot projects on the technologies to be implemented,
- Keep good communication with municipality internally, to customers, media, and all relevant national entities

## NMBM Renewable Energy Projects

### DSM and Energy Efficiency projects

- **Street Lighting Retrofit**
- 25000, 125W MV changed to 57W CFL (savings of about R2.5 million per year in energy cost.)
- Tender being prepared to retrofit township post tops with LEDs
- All Roads will in time be upgraded to be energy efficient



**NMBM Renewable Energy Projects (cont)**

- **Buildings Retrofit**
- 5 Municipal Buildings Lighting retrofitted. (savings of between 15-35% obtained)
- Three additional buildings plus two sports fields will be retrofitted in coming financial year.
- Traffic Lights
- All 14000 traffic light bulbs retrofitted. (Changed 55/75W to 10/11W LEDs)

**NMBM Renewable Energy Projects (cont)**

- Landfill gas projects:
  - Arlington: 4 MW
  - Koedoeskloof: 3-5 MW
- Small scale embedded generation e.g. PV, Wind etc (Eskom IDM or Voluntary Market)

**NMBM Renewable Energy Projects (cont)**

**Water reticulation and waste water treatment**

- Efficiency in water and sewerage pumping
- Final stage of Solar Water Heater business case and roll out strategy. CEF pilot project completed.

**Generation projects – Renewable Energy mix**

- Wind farm – 23 MW (Metrowind) REBID window 1
- Wind farm – 30 MW (Innowind) REBID window 2
- Biomass – Fish Water Flats plant - 3 MW

**Opportunities and current exploration**

- Waste to Energy projects (Koedoeskloof and Arlington)
- Explore a multitude of value chains
  - Source sorting
  - Collection
  - Recycling
  - Commodities
  - Energy
  - Heat
  - Fuel
  - High Value Crops



### Opportunities and current exploration

- Fishwater Flats – PPA
- High value waste water stream
- High Grade industrial water
- Biogas
- Heat
- Fertilizer



### Opportunities and current exploration

- Smaller scale reclamation works (Kelvin)
- Solar Water Heating (Low and High pressure systems)
- Small Scale embedded generation (Eskom IDM process – voluntary trade market)
- Off-grid electrification solutions (pilot underway)
- NERSA License approval for Municipalities 100KW
- Industrial opportunities – processes and waste stream
- Farming waste streams

### Questions on the way forward for RE

- Too many entities currently running around try to get a RE project going, consolidation will have to take place in the near future. How long before amalgamation?
- Foresee that for the next couple of years, as with the onset of electricity generation industry in SA, various municipalities will again be involved with its own RE generation,
- When will the newly announced ISO be in operation?
- Possibility of more relaxed regulation

### Recommendations

- Municipalities can and need to fulfil the Renewable Energy obligation in terms of their powers and functions that they have in terms of the Constitution and MSA,
- Renewable Energy project implementation is a time consuming and challenging process,
- DoE, Eskom and NERSA will have to follow a transparent evaluation process in allocating Renewable Energy licences.
- De-regulate and allow the Municipalities more responsibility in the regulatory environment.
- Provincial government to play a bigger role.



Thank you for your attention  
Any questions?



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The slide features a background image of a lush green forest with tall trees and sunlight filtering through the canopy. The text and logos are overlaid on this background. The 'Green Revolution' logo is in the top left, and the 'Nelson Mandela Bay Municipality' logo is in the bottom left. The text 'Thank you for your attention Any questions?' is centered in the upper half. The contact information for P J Neilson is in the bottom right.