An Energy Revolution

Waste…. Rubbish….. or Energy?

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
- 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

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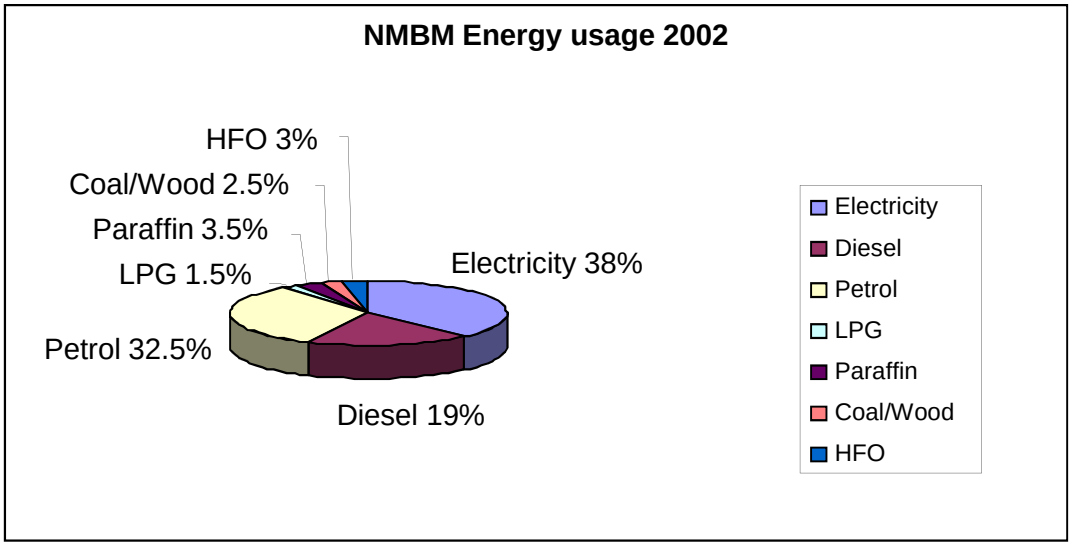
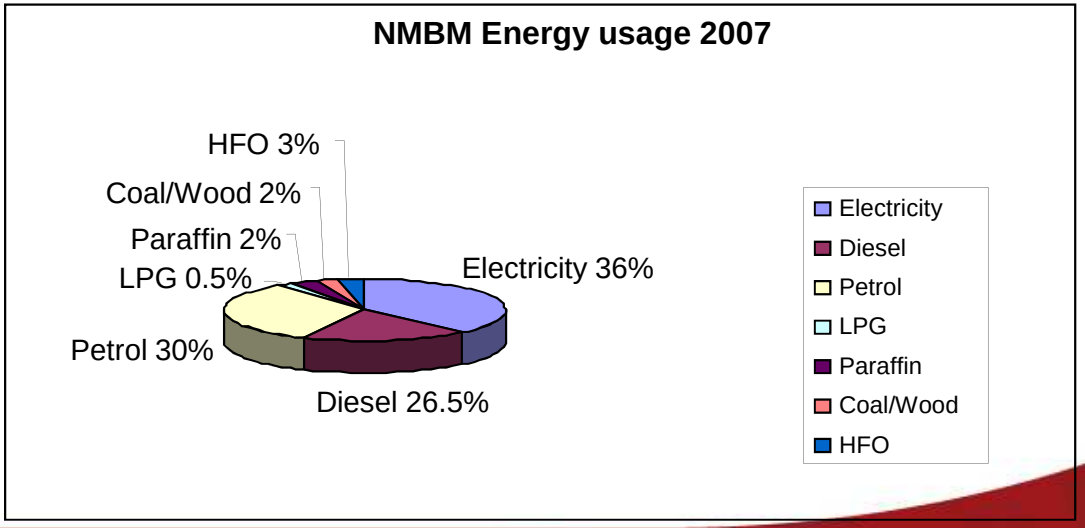
NMBM Energy History cont.

- 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, NGO's, advisors and potential investors - 2007/8
- Held serious of Workshops and started to engage with decision making entities - 2007/8
- Finalised project technical, financial and HR details – 2008/09
- Approval processes started with EIA, Generation licence application, drafting various contracts, PPA's, equipment technical details, grid connection aspects, financing and business models – 2009
- IEP updated in 2009.

NMBM energy consumption – 2002 to 2007





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NMBM category and consumption figures 08/09.

Category	GWh 2008/09	Consumption %
Domestic credit	390	11.5%
Domestic prepaid	800	23.5%
Business - Small	100	3%
Business - Medium	450	13%
Business - Large	1 610	47.5%
Streetlights	45	1.5%
Total	**3 395**	**100%**

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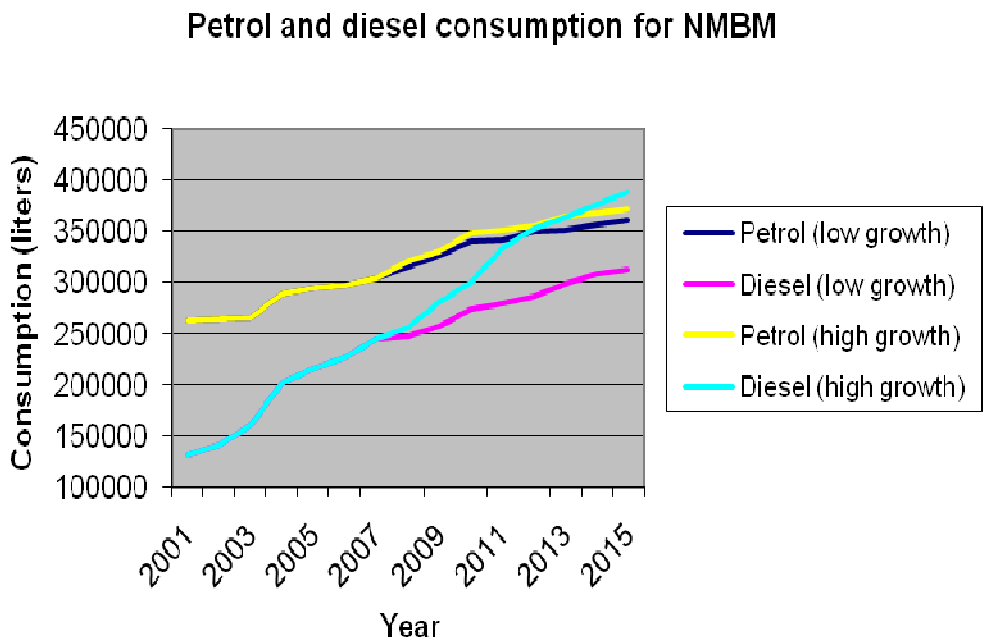
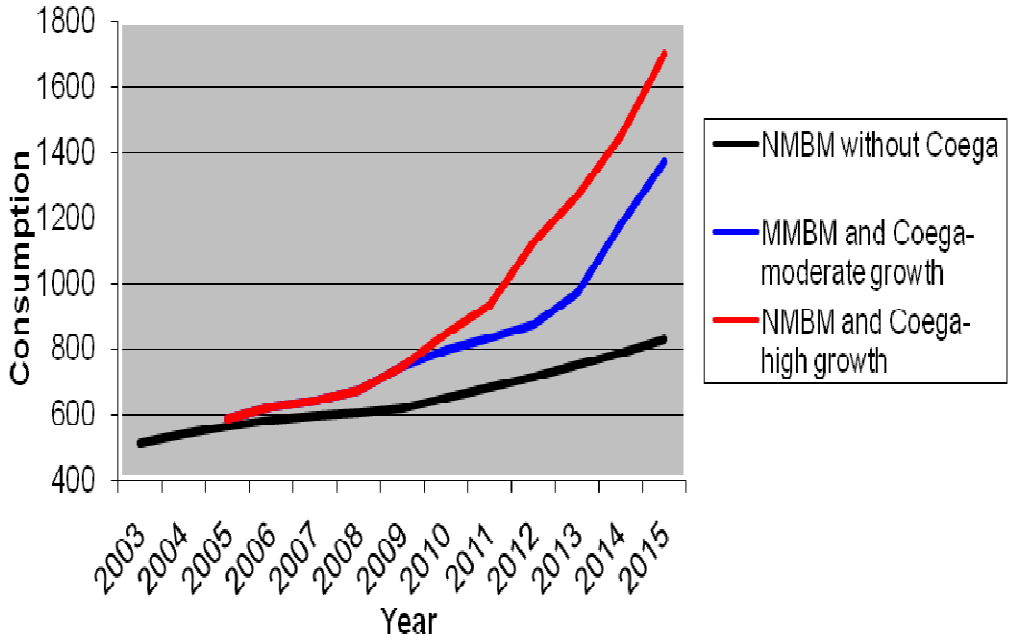
NMBM energy consumption predictions





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NMBM Renewable Energy Projects

DSM and Energy Efficiency projects

- Street light upgrade with EE lights
- Entire network upgraded to be energy efficient
- City Hall added as showcase buildings
- Water reticulation and waste water treatment
- Final stage of Solar Water Heater business case and roll out strategy

Generation projects – Renewable Energy mix

- Wind farm – 23 MW
- Biomass – Fish Water Flats plant - 2 MW
- Landfill gas projects:
  - Arlington: 2 MW
  - Koedoeskloof: 1 MW

Highest tariff increase of 2%, while after three years savings will be experienced

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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 <u>sustainable manner</u>

  (c) to <u>promote social and economic development</u>

  (d) to encourage the involvement of communities and community organisations in the matters of local government"

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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.
  (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.
  (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. "

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Legal aspects cont.

- **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***"

  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.

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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,
- 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/NGO's/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 Experience cont.

- Apply for generation licence with NERSA
  - Conduct EIA – allow at least 18 months
  - Complete regional/municipality IEP
  - Get technical issues finalised
  - Projects are in line with various grid and meter codes
  - Complete financial model
  - Developed and get PPA signed by all parties
  - Obtain funding letters from investors/financial institutions
  - Finalise HR info and relevant issues
  - Sort out Health and Safety aspects
  - Make sure that projects are BBBEE compliant
  - Secure land rights
  - Obtain primary energy rights, i.e gas, water etc.
  - Developed tariff structure and cost structures with RE projects as part of energy mix.

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NMBM Experience cont.

- Various challenges can be experienced such as:
  - No clear-cut policy and regulatory principles been formulated,
  - Conflicting answers from different officials within the same institution,
  - Respective institutions are only focusing on their narrow areas and don't understand the broader picture,
  - Single buyer model with Systems Operator that are within Eskom is making it basically impossible to get any PPA's signed,
  - Small scale projects are not taken seriously when negotiating with Eskom,
  - Lack of practical experience by officials involved with RE makes it difficult to obtain supportive assistance,
  - Due to long process times in SA, international investors, manufacturers and financial institutions may lost interest in RE projects and
  - Timeframes of any RE project need to be multiplied by π.

Questions on the way forward for RE

- Where will the finance come from to sustain REFIT?
- What criteria will DoE, Eskom and NERSA be made in evaluating various RE? Will it be transparent decision?
- To 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 and if it will be in time for the current RE projects to receive the benefit if it.
- South Africa has all the various policies, IRP announcement, various RE projects, when will we receive the go-ahead?

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,
- Current ESI structure not supportive to Renewable Energy licence applications and implementation options and
- Municipalities to investigated the option to become Renewable Energy generators.
- Accept that the recent initiatives of Government and NERSA will assist in RE roll-out.

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