



SOUTH AFRICAN LOCAL  
GOVERNMENT ASSOCIATION

**SALGA**

*Inspiring service delivery*

**Future business models  
for municipal electricity  
utilities...**

**New Models or rehash of  
reform agenda???**

**AMEU CONVENTION  
October 2016**

**By Nhlanhla Ngidi**

# REMEMBER THIS?

## Termination of the Electricity Distribution Industry (EDI)

- Cabinet decided to terminate the Electricity Distribution Industry (EDI) restructuring and to discontinue the process of creating the Regional Electricity Distribution (REDS) with immediate effect.
- Although the Electricity Distribution Industry Holdings (EDIH) had made significant progress in establishing the REDs, Cabinet approved the recommendation that the Department of Energy takes over the programmes previously executed under the EDIH mandate.
- The Department will review the whole electricity value chain with a view to developing a holistic approach to revitalize electricity infrastructure, energy security as well as the financial implications. An administrator will be appointed to attend to the winding up of EDIH.

## What happened to this review?

# Lets Go back!!!! Key Drivers of EDI Restructuring

- Fragmentation and inefficiencies: no economies of scale
- Inequitable treatment of customers / tariffs
- Non-rationalised Regulatory frameworks in the EDI
- Financial crisis – many distributors bankrupt
- Monopoly model no longer an option
- Inadequate investment in refurbishment and maintenance
- Loss of experience and skills
- Accelerated electrification etc.

***All of the above seem to be still very much relevant to the current dispensation.***

***Things are even getting worse. Municipalities owing Eskom over R6bn and its escalating but some of it is due to Eskom's practices and internal policies***

***Are we going see a plan about the new business model for the Electricity Distribution Industry?- Policy shift needed urgently***

# The Demise of the REDs Model

- **2010 Cabinet abandons REDs model**
  - Notes lack of support for a constitutional amendment
- **After 7 years and the expenditure of hundreds of millions, Cabinet decides to close EDI Holdings**
  - DOE asked to:
    - “review the whole electricity value chain with a view to developing a holistic approach to revitalise electricity infrastructure, energy security as well as the financial implications”
- **2011 EDI Holdings transferred to DoE**
- **2012 Presidential Infrastructure Coordinating Commission (PICC)**
  - EDI included in Strategic Investment Priorities (SIPs) - Very Little is happening here to date
  - DoE applies for funds to run pilot exercises in using Approach to Distribution Asset Management (ADAM)

# Constitutional Provisions

- Sections 156 (1) and (2) assign municipalities executive authority and right to administer local government functions laid out in Schedule 4 Part B which includes electricity and gas reticulation
- Section 151(3) vests municipalities with the right to govern those matters on their own initiative, subject to national and provincial legislation, as *provided for in the Constitution*
- Section 139(1) : *When a municipality cannot or does not fulfil an executive obligation in terms of legislation, the relevant provincial executive may intervene by taking any appropriate steps to ensure fulfilment of that obligation ...*
- Section 155(7) National government.... and provincial government have the *legislative and executive authority to see to the effective performance by municipalities of their functions in respect of matters listed in Schedules 4 and 5, by regulating the exercise by municipalities of their executive authority*

# Legislative Provisions

- Electricity Regulation Act: defines electricity reticulation as the “trading or distribution of electricity and includes services associate therewith”.
- Municipal Systems Act 32 of 1998: defines municipality as service authority with the right to decide who will distribute electricity in its area and may appoint a suitable service provider in terms of a service delivery agreement
- Municipalities have a duty to give effect to the provisions of the Constitution MSA(s73) by:
  - Rendering services through an internal mechanism or an external mechanism (s76 a & b of Systems Act).
- Electricity Regulation Act: S.28(2) A service delivery agreementa must be entered into by a municipality with an external service provider and it must comply with the Municipal Systems Act, the Municipal Finance Management Act and this Act.
- The Municipal Fiscal Powers and Functions Act12 of 2007 regulates the municipal surcharges

# No SDAs: Current dispensation is subversive of:



- the right of municipalities to administer the trading and distribution of electricity (electricity reticulation) within the Eskom supply area,
- municipality's right to govern, on its own initiative, local government affairs of its community;
- an object of local government, namely to ensure that provision of services to communities are done in a sustainable manner;
- Municipal credit control action in Eskom Areas of Electricity Supply
- the implicit constitutional power of the municipalities to charge fees for an electricity service; and
- the municipality's constitutionally entrenched fiscal power to impose surcharges on fees for electricity reticulation services rendered on behalf of the municipality.

***This further negatively impacts on municipalities' ability to collect more revenue from Electricity***

***Not enough attention given to these issues at National Level hence Municipalities are constantly forced to change ways of doing things to keep their ships afloat***

# The Premises of New Models (a common basis to proceed)

- 1. Unavoidable market dynamics.** Greater energy efficiency, lower energy intensity, increasing costs of Eskom energy, decreasing costs of solar and wind, increased use of gas, increased generation from solar and wind, increased co-generation and embedded generation.
- 2. Changes in market structure and business models are necessary.** The existing centralized generation mandate is at odds with market dynamics, and distributors' existing business model is not sustainable.
- 3. These dynamics will result in an erosion of revenues for municipalities.** Ability to compensate through high prices and to cross-subsidise will reduce in the face of increasing competitiveness of alternatives and reduced sales.
- 4. Institutions are naturally conservative.** Municipalities will tend to act defensively in the face of change, holding on to the existing benefits of the distribution model and adjusting tariffs & charges to maintain revenues. However, municipalities are also already responding to changing market dynamics.

# Premises (a common basis to proceed)

5. **Changes in pricing structures will affect the distributing of costs and benefits over time.** Tariffs will need to become more cost-reflective over time in the face of competitive pressures. This will require use of fixed costs with variable energy costs linked to the actual cost of energy flows. More specifically, impacts on poor households will need to be carefully understood and mechanisms to mitigate impacts developed.
6. **Different approaches to rooftop PV implementation will have important effects on both the level and outcomes of investments in embedded generation.** There are three dimensions here – (a) exports versus own-use, (b) compensation for electricity back to the grid, (c) changes to the pricing of grid-tied electricity purchased from the grid.
7. **Improved information, analysis and forecasting.** Municipalities will need to develop better models to understand current demand and forecast future demand for electricity. Smart meters will need 'big data' management & analysis & real-time demand management.

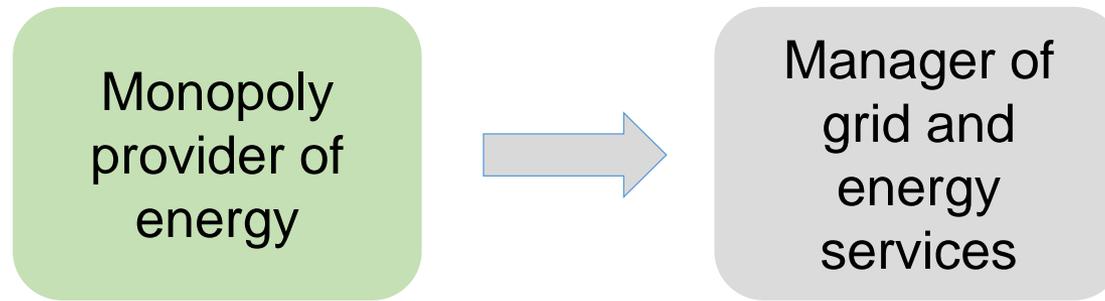
# Premises (a common basis to proceed)

8. **Increased investments.** Municipalities who own distribution networks will need to invest significantly in their upkeep and upgrading, including in the smart metering, information management systems and demand management systems identified above.
9. **Inaction is not an option.** Inaction in response to these dynamics will lead to the worst outcome from both a utility and society-wide perspective.
10. **Understanding and responding to different perspectives.** Customer, utility and society-wide perspectives will differ. The analysis undertaken needs to understand all three perspectives.

# Core proposition: Distribution business model is under threat & must evolve

In the past municipalities were able to act as monopoly providers, passing on input costs (even when these rose steeply) and adding a generous margin (tax/rent\*).

However, the rapidly changing electricity supply market, with increasingly competitive and decentralised generation options, means that this business model is no longer sustainable.



\* *Economic rent = excess income over and above the intrinsic cost of providing the service*

# Studies On Possible Business Models

- First study done by GIZ in November 2015 to map the sector and start identifying opportunities:
  - Identification of applicable legislation (re. electricity generation and local government)
  - Identification of business models, based on SA and international existing initiatives by electricity utilities
  - Some findings of the study are presented in the next slides
- Follow up study started in September 2016:
  - To investigate some business models in more details and identify applicability in SA

# Business models identified

1

## Municipal Generation of RE

Own use

Municipality as an Energy Service Company (ESCO)

Green electricity sold to its distribution network at a premium

2

## Municipality as an off-taker of RE

Net-metering (net-billing) Small Scale Embedded Generation

Direct purchase

3

## Municipality as a facilitator for RE installations

Wheeling

Use of municipal infrastructure for private generation

Energy service to customers with municipality as facilitator

Other models for SSEG (NetFIT, selling to Eskom, etc.)

*Work in progress*

# Other Business models identified

4

## Municipality as a Gas Reticulation and Supplier

Own use in municipal buildings

Gas Supply and Reticulation for new developments

*Work in progress*

# Existing initiatives in SA Municipalities

## Business Model 1 Municipal Generation of RE

- Own use of electricity
  - Solar PV panels on municipal buildings (Ekurhuleni)
  - Solar panels in municipal Waste Water Treatment Works (Camdeboo, Hessaqua)
  - Biogas to energy in municipal Waste Water Treatment Works (Johannesburg)
  - Landfill gas to electricity (Ekurhuleni, eThekweni, Johannesburg)  
(Solid waste to energy also provide opportunity although there is not yet such a project at municipal level in SA, but several studies are on-going)
- Municipality as an Energy Service Company
  - City Power and Cape Town – Innovative approaches to deliver energy services to low income households which may include gas provision, solar panels, SWH, grid electricity and in most cases a mix of those
- Green Electricity sold at a premium
  - City of Cape Town first offered Green Electricity Certificates to its resident in 2012/13, sourced from the privately owned Darling Wind Farm (5.2 MW)
  - eThekweni municipality undertook a study in 2014 on the willingness of consumers to pay a premium for green electricity  
(The feedback so far is not entirely encouraging)



# Existing initiatives in SA Municipalities

## Business Model 2 Municipality as an off-taker of RE



- Direct purchase
  - eThekweni – Power Purchase Agreements (PPA) at megaflex for no longer than 3 years – 6 contracts signed
  - Exploratory work is on-going to enable the direct purchase of electricity by municipalities
- Small scale embedded generation
  - Much going-on!
  - In July 2016, NERSA agreed to approve municipal Small Scale Embedded Generation tariffs as an interim solution and on a case by case basis, while waiting for the regulations to be finalised, with the understanding that the interim tariffs and processes will be adapted to the regulations once published.
  - AMEU / SALGA, with support from SEA, GIZ and GreenCape are in the process of developing a standardized set of documents (application forms, contracts, guidelines), to assist municipalities in adopting SSEG processes.
  - Progress as of August 2016 on the adoption of SSEG processes in municipalities (next slide)

# Existing initiatives in SA Municipalities

## Business Model 2 Municipality as an off-taker of RE

Progress as of August 2016 on the adoption of SSEG processes in municipalities

Province	Keeping track of existing installations	Official application system	Approved SSEG tariffs	Number of installations	kWp installed	Average size (in kWp)
Eastern Cape	2	2	1	154	1,302	8
Gauteng	3	2	1	9	4,505	501
KZN	1	1	1	18	70	4
Limpopo	2	0	0	3	265	88
Western Cape	13	11	9	301	8,887	30
North West	1	0	0	10	2,000	200
Mpumalanga	0	0	0	-	-	
Northern Cape	1	0	0	4	183	46
Free State	1	0	0	3	400	133
<b>TOTAL (Aug 2016)</b>	<b>23</b>	<b>16</b>	<b>12</b>	<b>495</b>	<b>17,029</b>	<b>34</b>
<b>PAST DATA to track progress</b>						
<b>TOTAL (Feb 2016)</b>	10	3	5	264	9,044	34

# Existing initiatives in SA Municipalities Business Model 3 Municipality as a facilitator for RE installations



- Wheeling
  - Nelson Mandela Bay: Wheeling agreement in place allowing RE to be sold to willing buyers via the municipal grid
  - Tshwane: Electricity generated from biogas on an on-site cattle farm in Bronkhorstspuit wheeled through Eskom and Tshwane's grids to a private company
- Energy service to customers with municipality as facilitator
  - Nelson Mandela Bay – a PV Investor's tariff was approved by NERSA on 1 July 2016. the concept is being finalised and the project will be implemented thereafter

# Existing initiatives in SA Municipalities Business Model 4 Municipality as a Gas Reticulation Company and Supplier

- In 2008/9 City of Joburg issued an RFP for gas reticulation and distribution in residential areas
  - Not sure of the progress to date
- Some Tshwane Property Developers have gas reticulation in their new developments

# Closing Remarks

- Approximately 177 out of 257 munics reticulate electricity
- Large number of them owing Eskom millions of rands
- Eskom still distributes electricity within the boundaries of a lot of munics, although without any service delivery agreements – munics losing revenue because of this non regulated relationship
- Eskom continues to supply most commercial farms directly
- Eskom also supplies about 150 or more key customers directly
- Municipal Funding Models (Grants, tariff etc.) urgently needs review

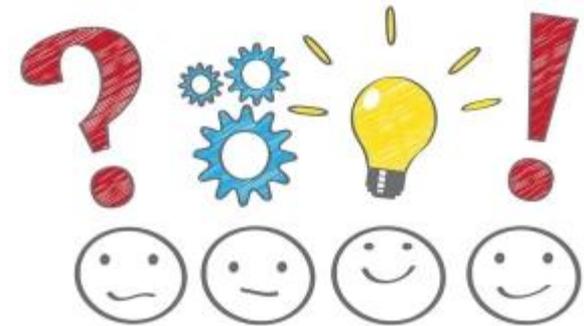
So,

- In the absence of policy direction, for the benefit of the country and industry, voluntary reform will be needed between Municipalities, Customers and Eskom
- Municipality's revenues still need to be protected and improved – Mutual agreements between Eskom and Municipalities
- Core goals of reform still remain but the silence is deafening, municipalities are casualties of this situation
  - Delivery of reliable, competitively priced electricity to all
  - Efficient and financial viable EDI to achieve above
- Unaddressed refurbishment and maintenance backlogs are still growing and need urgent attention
- Skills and experience in EDI also diminishing and need addressing urgently

# Reform Lessons : Prof Anton Eberhard

## Academic Study

- Political agreement
- Leadership and governance
- Customers will be key reform allies
- Eskom has to be on board
- Create policy and regulatory certainty and remove conflicting pieces of legislation
- Timing
- Incremental reform no big bang
- Prioritise reforms to maximize benefits
- Define clear goals and performance outcomes
- Funding for reform and creating incentives for improved performance
- Back reforms with regulatory muscle
  - Ring-fencing
  - Reporting
  - Conditional funding flows



If we agree that...

... the Distribution business model is under threat, still needs reform agenda & must evolve

The question is ...

...How do we assist in the policy landscape and shift to open up new opportunities for municipalities'sustainability in the sector?

...How can we assist DoE in tabling back restructuring initiatives taking cognisance of the current changes and challenges that have existed in the past 3-5 decades?

...How can we get other institutions in the industry to stop contributing to the demise of the municipal electricity utilities?



..... Or are these even the right questions ?!?!!



Ta...

## Supporting organisations / institutions / programme in the sector

- AMEU
- GIZ - SAGEN: South African German Energy programme
- SEA: Sustainable Energy Africa
- SACN: SA Cities Network
- GTAC / ERLN: Government Technical Advisory Centre and Economies of Regions Learning Network
- USAID – SA LED programme: SA Low Emission Development programme
- Danish Energy Programme
- CSIR: Council for Scientific and Industrial Research
- MISA: Municipal Infrastructure Support Agent
- ICLEI: Local Governments for Sustainability
- GreenCape
- WWF
- Other embassies / international partners: US Embassy, EU representation, etc.