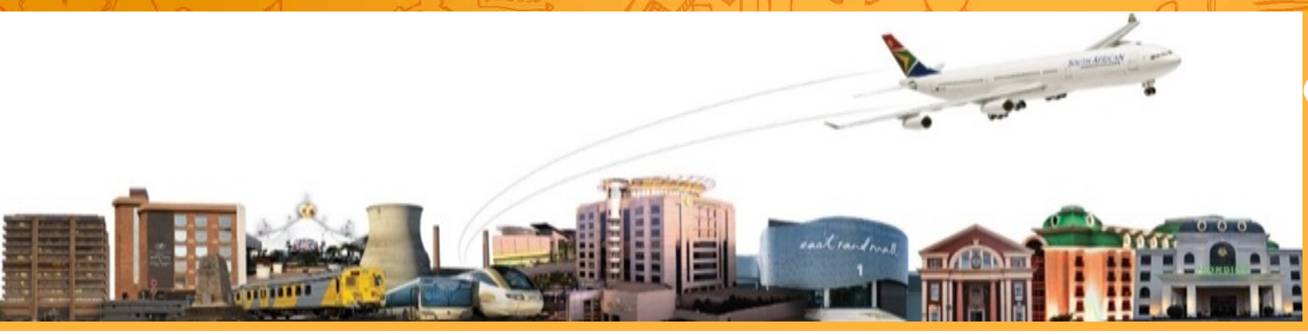
Municipal Perspective on Energy Market Restructuring

Hendrick Raedani
CoE Alternative & Renewable Energy Division
Boksburg Corporate office
hendrick.raedani@ekurhuleni.gov.za
073 380 2747



City of Ekurhuleni

Regulatory amendments

1. **ERA amendments on new generation regulations –** 16 October 2020

2. **Amendments to schedule 2 of ERA –** Licensing exemption of generation units below 100MW, 5 October 2021

Implications/Opportunities For Local Government

New Generation Regulations

- Opens the door for Municipalities to play a major role on generation
- Development of own generation capacity and as well as direct purchase from IPPs
- Investments into the local Economy – *through developments of IPP plants*

Schedule 2 of ERA

- Shortened time for projects development – due to licensing exemption
- Increased number and capacity of private generation for own use – ***CoE over 200MW EG***
- Increased number of wheeling requests
- Grid defection
- Potential revenue loss
- Injection of clean energy into the Municipal distribution grids - EG excess generation and internal wheeling

City of Ekurhuleni

Challenges to be addressed

1. **Uniformity on interpretation of recent ERA amendments by Stakeholders**

- DMRE, NERSA, NT, ESKOM and Municipalities should speak in one voice
- Sec 34 of ERA and Schedule 2 - *different views leads to confusion*
- NT circular 118 resonates with Local Government stand point.

2. **Ailing Municipal Distribution Grid >> Are Municipal grids ready??**

- Maintenance backlogs
- Unstable grids will deter investments *- IPP deemed energy payments risk*
- Funding needed to prepare the grid for integration of renewable energy – To clear maintenance backlogs and possible upgrades

3. **Capacity and Skills**

- To handle increased volume of EG applications and Wheeling – ***Spike***
- Lack of relevant skills and resources to integrate renewable plants – Grid integration engineers, grid impact studies, grid code compliance issues
- SALGA, AMEU, SEA, GIZ – **Doing their bit to address this challenge**

Challenges to be addressed Continues……..

4. Role of NERSA on Wheeling and EG export credits

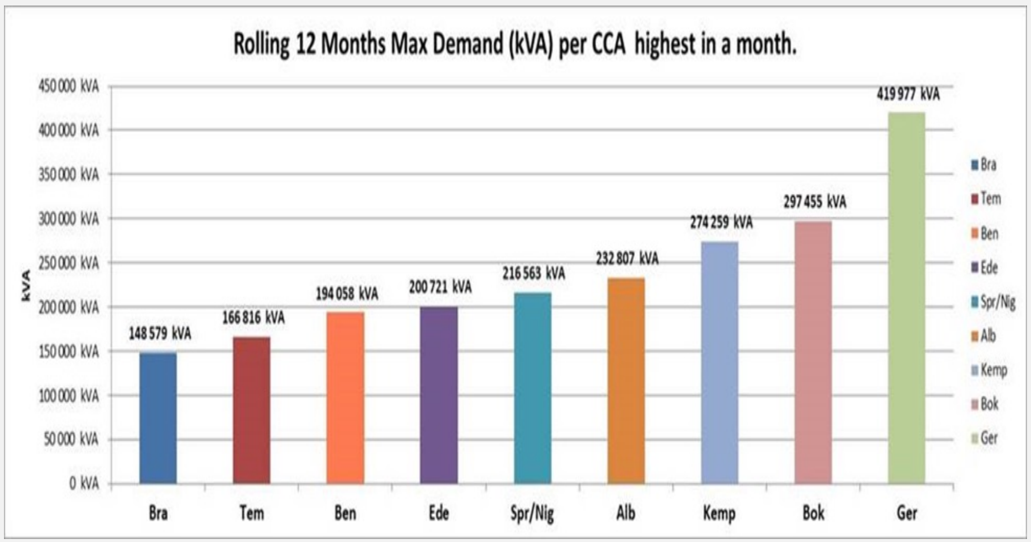
- NERSA did not approve any Municipal wheeling tariffs and EG export credits this financial year, though previously approved.
- CoE signed wheeling agreements based on previous NERSA approval – *what now??*

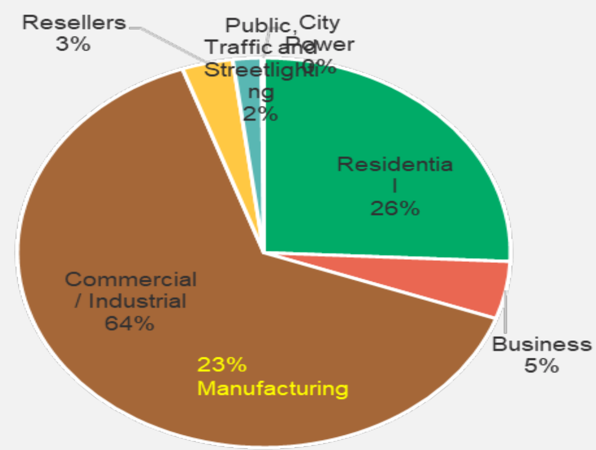
5. ESKOM role on wheeling

- Talks of Eskom imposing deposits on Municipalities for wheeling transactions
- **CoE - 57** Eskom intake points (POD), @R85 Million per POD = R5 Billion in deposits
- If this is the case, then wheeling from Eskom grid to Municipal grid won't be viable.

About CoE

- CoE is a category A Municipality
- One of the country's largest Metros, as well as one of the largest electricity distributors.





- CoE has no power stations and reliant on Eskom for power requirements with a total of 2.5GW demand (7% contribution to SA demand)
- The city approved an Energy and Climate Change Strategy and one of the objectives is to diversify energy supply to include renewable and cleaner energy sources with a target of 10% by 2020 and 30% by 2030

IPP Programme Implementation

- 47 IPPs appointed through an RFP process
- Eskom Megaflex tariff plus discount for 17 years
- Accepted only embedded IPPs (no wheeling), capacity 5MW and above
- **MFMA section 33** process conducted and completed (NT views & Recom),(Council resolution) – ***Long term contracts***
- **Section 34 of ERA** on new generation regulations applied for - ***concurrence stage >schedule 2> NT Circular 118 = licensing exemption for plants <100MW***
- 20 years PPA

Progress thus far:

- 90% PPA signature rate
- 15 IPPs received letters of intent to fund from investors and 5 are busy with grid integration studies
- **Zestfontein 90MW solar farm** – CoE Real Estates department preparing land lease agreements
- Estimated start of construction for some IPPs – **January 2023**
- First generations units within 12 months

Renewable/Clean technologies considered

Technology	Number of service providers	Range (MW)	Total Proposed Capacity (MW)
Solar PV	31	5 -10	298
Waste to Energy	6	5 - 33	139
Landfill Gas	1	5	5
Gas	7	17 - 50	195
Fine Coal Gasification	1	36	36
Kinetic Power Production	1	10	10
Total	**47**		**683**

CoE IPP 90MW Solar Farm

BENEFITS

- Renewable / Clean Energy
- Savings on Eskom bulk purchases – Estimated 13.9 bn

CoE IPP Programme Financial Procurement Statement		
Summary of Savings per technologies	**Total**	**Percentage saving compared to the overall saving**
PV Solar	1,692,354,826	**12.09%**
Waste to Energy	4,904,828,318	**35.05%**
GAS	7,122,267,468	**50.90%**
Landfill Gas	14,025,655	**0.10%**
Fine Coal Gasification	-	**0.00%**
KPP	258,727,349	**1.85%**
Total	**13,992,203,616**	

- Affordable energy for customers
- Reduction of fossil Fuel reliance
- Reduction of Power losses – *No long transmission lines (load closer to point of generation)*
- Job opportunities – *10 000 temporary and 1000 permanent jobs*
- Climate Change - *Reduction of GHG Emission*
- Economic growth – *Through investment to the local economy*

Lessons learned

- ***Benchmarking against Eskom Megaflex tariff –*** *Megaflex is volatile and difficult to predict*
- ***Start with small but fundable projects***
- ***A fundable PPA will attract investors***
- ***Good Credit rating of Munic can aid PPA fundability***
- ***Good Eskom payment history can also aid PPA fundability***
- ***Proper PPA risk allocation***
- ***Land – Scarcity of land in Metropolitan areas***

CoE Own Built DER

- **Installation of solar rooftop on Council Buildings**

Area/Name	Rated capacity (Kw)	Type
Alberton CCC	500 kw	Solar roof top
Thembisa CCC	250kw	Solar roof top
Boksburg CCC	250 kw	Solar roof top
Brakpan CCC	250 kw	Solar roof top
Kempton Park CCC	750 kw	Solar roof top
Bunny Park	100 kw	Ground Mounted solar
OR Tambo Precint	200 kw	Ground Mounted solar
Nigel CCC	250 Kw	Solar roof top
Alberton Swartkoppies Municipal Complex	250 kw	Solar roof top
Springs CCC	250 kw	Solar roof top

CoE Own Built DER

- **Municipal Biogas landfill generator – 1MW**

Wheeling & Export Credits

- CoE developed a wheeling framework to integrate **DER – 270MW** current applications
- Wheeling presents a new revenue stream for the Munics through **DUoS charges:**
- **Based on Eskom DUoS rates at 4.35% CoE Technical loss DUoS rates (CoE) All Seasons G.2.1 Energy charge (R/kWh) R 0.07,81 >>leveraging our greatest asset, the grid**

- **CoE has an embedded generation integrated framework**
- **(SSEG) over 200MW of registered embedded generators (SSEG)**
- **Introduction of feed – in tariff**

Thank you

City of Ekurhuleni