Shifting perceptions on SSEG

Principles for adjusting tariffs to accommodate the changing environment

25th AMEU TECHNICAL CONVENTION 2015

October 2015

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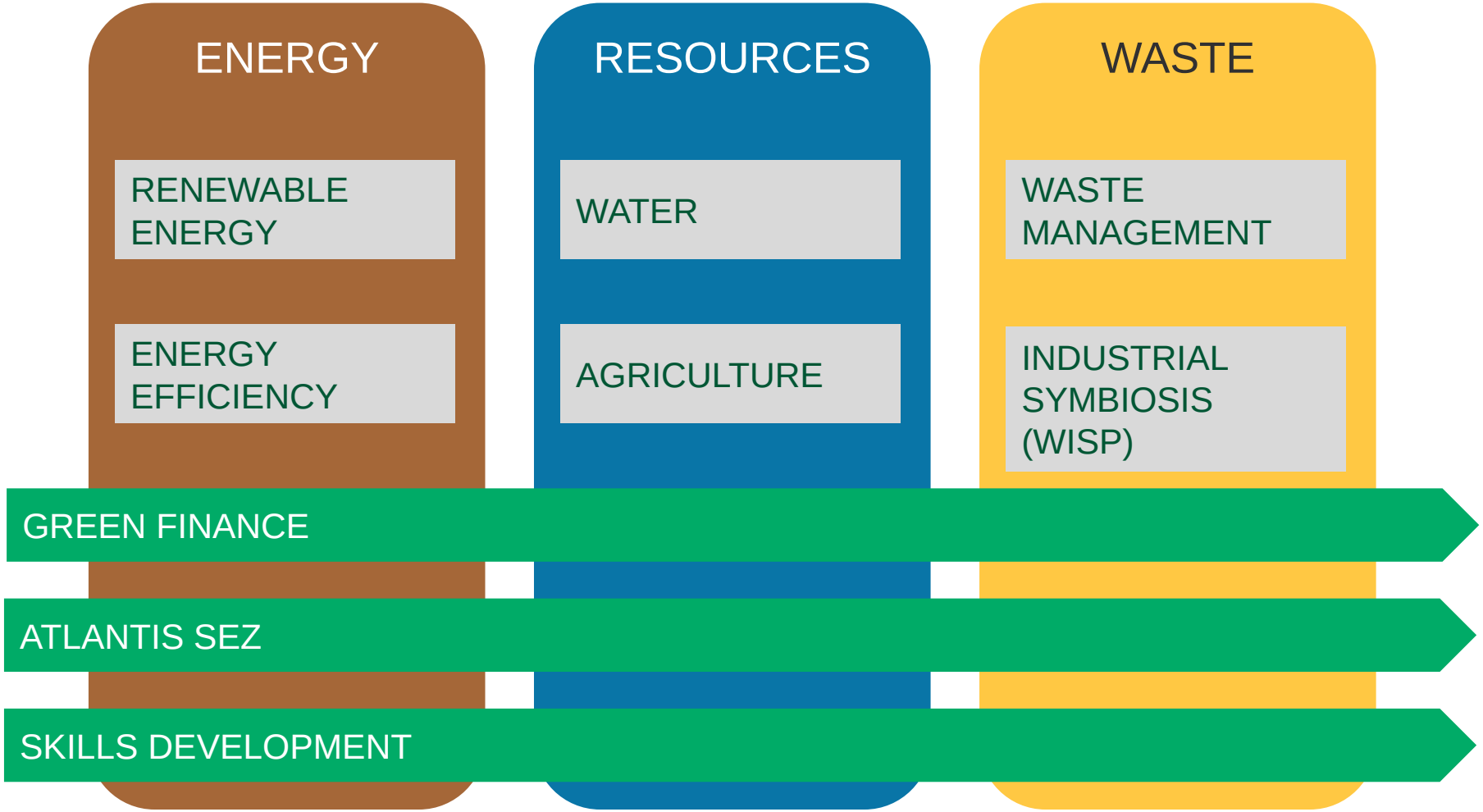
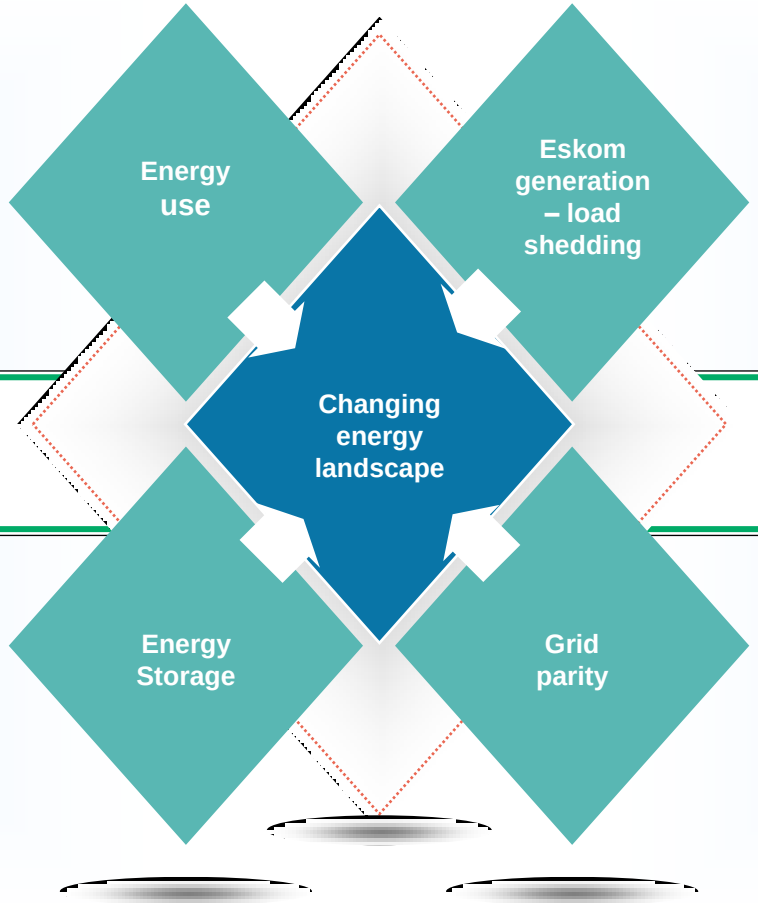
Who is GreenCape?



The changing energy landscape has necessitated new tariffs

- Both peak & total electricity use is well below forecasted figures.
- A decrease in units sold.

- Eskom generation plant availability has been drastically reduced
- Increased Loadshedding for the next 5 years.



- Energy Storage is becoming a reality - +-R3.30/kwh and dropping.

- Approaching the point of grid parity
- Solar Photovoltaic (PV) installations are gaining momentum
- The price of municipal electricity = price of electricity generated by PV

Effective SSEG tariffs are quickly becoming the most prominent financial tool for promoting SSEG in South Africa

Accommodating the changing environment

9 Principles for effective SSEG tariff design

Goals:

1. Protecting municipal net surplus in a fair and sustainable way.
2. Ensuring municipal longevity within & adaption to the changing space energy landscape.
3. Facilitating economic and social development.
4. Promoting climate change mitigation and adaption.

1. Ensuring that tariffs are transparent

Transparency

- It is important that any changes to the tariff structure or the introduction of a new SSEG tariff are done in combination with some degree of **consumer engagement**
- Engagement should be underpinned by a **transparent tariff policy** which is accessible and **easy to understand**.
- Public consultations around electricity tariff changes be **used as an opportunity to explain the tariffs** and how consumers **can adapt their energy usage** to manage their electricity costs more effectively.

2. Undertaking an accurate cost of supply study

Cost of Supply

- Cost of study supplies should be **carried out by all municipalities** prior to developing new tariffs.
- A full cost of supply exercise should be carried out to determine the **true, fixed and variable costs** of supplying electricity to consumers.
- Ideally the costs should also be segmented by **appropriate consumer type**.
- Using a more **granular approach to segmenting customers** based on a set of predefined characteristics (e.g. direct cost to municipality and consumption patters that are linked to certain demographic indicators) would allow municipalities too completely rethink their tariff systems.

3. Developing accurate customer load profiles

Load Profiles

- Sample **high-resolution consumer** demand **data** should be collected over a period of time and used to **generate representative high resolution load profiles**.
- These load profiles can be used to model the resulting **net electricity revenue and margins resulting** from the proposed tariff change.
- This will help verify revenue sufficiency and the effectiveness of the designed tariff.
- The **impact on typical customer electricity bills** from applying the various tariffs under different scenarios should also be modelled and analysed.
- This will help test the fairness of the tariffs to the different customer types.

4. Encouraging economically optimised PV installations

Economic Efficiency

- All tariff policies and tariffs should be **designed** in such a way as to **promote** installations that are **economically efficient**.
- The tariff needs to ensure that customers install a system that results in the **lowest possible Levelised Cost of Electricity** (LCOE) for that customer and the municipality.
- This may mean that customers are incentivised to install larger and/or higher quality systems.
- A lower **LCOE will result in a better return** on investment.
- A system offering a better return on investment will **require less of an incentive** type tariff and will hence have a smaller impact on the municipality.

5. Introducing a feed-in rate

Rates

The only difference between a regular electricity tariff and an SSEG tariff should be the **addition of a feed-in component.**

Cost-based

- Simpler
- Cost of SSEG plus a targeted return.
- A full cost of supply study would be required

Value based

- Value of energy
- Avoided energy cost/purchases, and, if any, the network and line losses costs.
- Other positive externalities such as climate change mitigation, reduced health impacts, less air pollution and increased supply security

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6. Setting a Feed-in payment duration

Duration

- Electricity customers and SSEG developers that are looking to implement a SSEG project **require a reduced risk profile**.
- Risk involved in SSEG project development can be reduced by **ensuring that the payment stream will not end** before the SSEG customer or developer has had a chance to recover their investment.
- Long term **price security** in the midst of rapidly increasing electricity prices is important for lowering the risk of PV investment and ensure **lower system costs** . With lower costs for SSEG the municipality is able to generate the same uptake with lower tariff incentives.
- Providing customers with **certainty can reduce the impact on municipalities** while still ensuring that the municipality uses its **tariff policies to support the uptake of SSEG**.

7. Allowing any customer to be on a SSEG tariff

Rules

Reduce the impact of tariff switching

- ❑ SSEG tariffs should be design so that customers **cannot reduce their bill by simply switching** onto that tariff (without making any other changes to self-consumption or generation).
- ❑ Customers with a very small to very large installation should be treated equally.

8. Implementing TOU metering for SSEG

Time of Use

- All customers with SSEG installations **should be on a time-of-use tariff** (if a time-of-use tariff is available for that customer class).
- A time-of-use tariff is **more cost-reflective** than a flat or two-part tariff in that it accounts for the varying costs of generating and supplying electricity.
- Electricity demand and prices vary throughout the day and year and **solar panels generate a vast majority of their power the cheaper sunshine hours**.

9. Ensuring grid connection remains the most appealing option

Grid Connection

- It is important that all decisions regarding SSEG tariffs are taken to **ensure than remaining grid-tied is the most attractive option** both financially and in terms of security of supply when compared to off-grid alternatives.
- Grid defection would be the worst case scenario for the municipality and the grid as a whole.

Conclusion

A sustainable approach to SSEG requires a shift in thinking:

- ***Tariffs need to be designed to ensure that customers remain on the grid.***
- ***Customers need an econmically beneficial busines***
- ***In order to achieve this customer need to be compensated for energy fed back onto the grid.***
- ***The tariff designed should be fully transparent and easy to understand.***
- ***Municipalities need to know what it costs to supply a customer with energy and should have detailed load profile information to make these decisions.***
- **Time of Use tariffs are a priority, especially for SSEG customer.**

Source: Detlof von Oertzen and the Konrad-Adenauer-Stiftung, 2015

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