

**DOMESTIC USE OF ENERGY
CONFERENCE**

March 2015

**DE ZALZE RESIDENTIAL ESTATE
ELECTRICITY PLAN
IMPLEMENTATION**

Corrie Visagie

Gateway Utility Solutions

March 2015

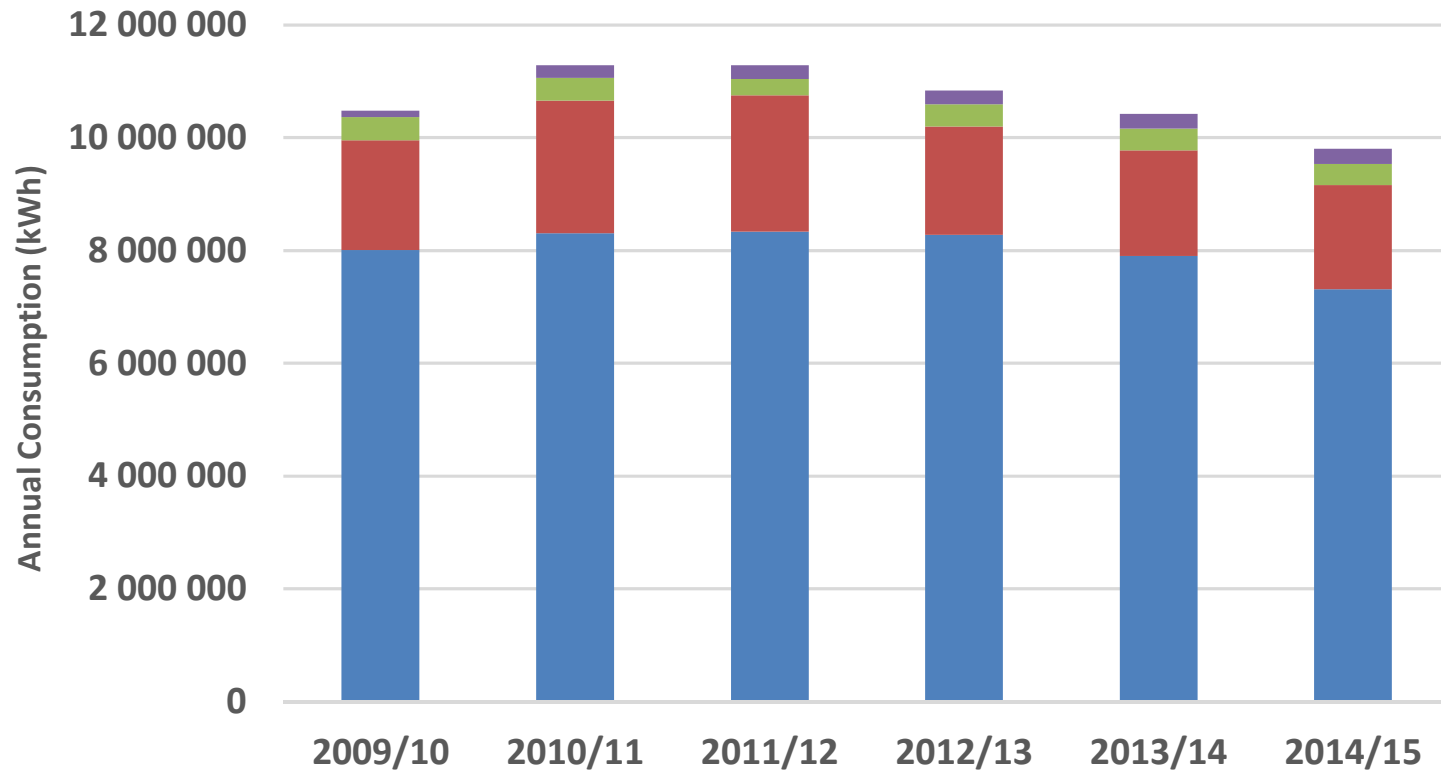
PRESENTATION CONTENTS

- **ESTATE ELECTRICITY STRUCTURE**
- **ELECTRICITY OBJECTIVES AND PLAN**
- **EVALUATION PARAMETERS**
- **RESULTS**
- **CONCLUSION**

ELECTRICITY STRUCTURE

- **Electricity purchased from Eskom at Miniflex**
- **418 houses**
- **Wine Cellar**
- **Golf Club**
- **Golf Lodges**
- **Internal Electricity Tariffs positioned for cost recovery**
- **Minimum cross-subsidisation**

Estate Consumption Spread



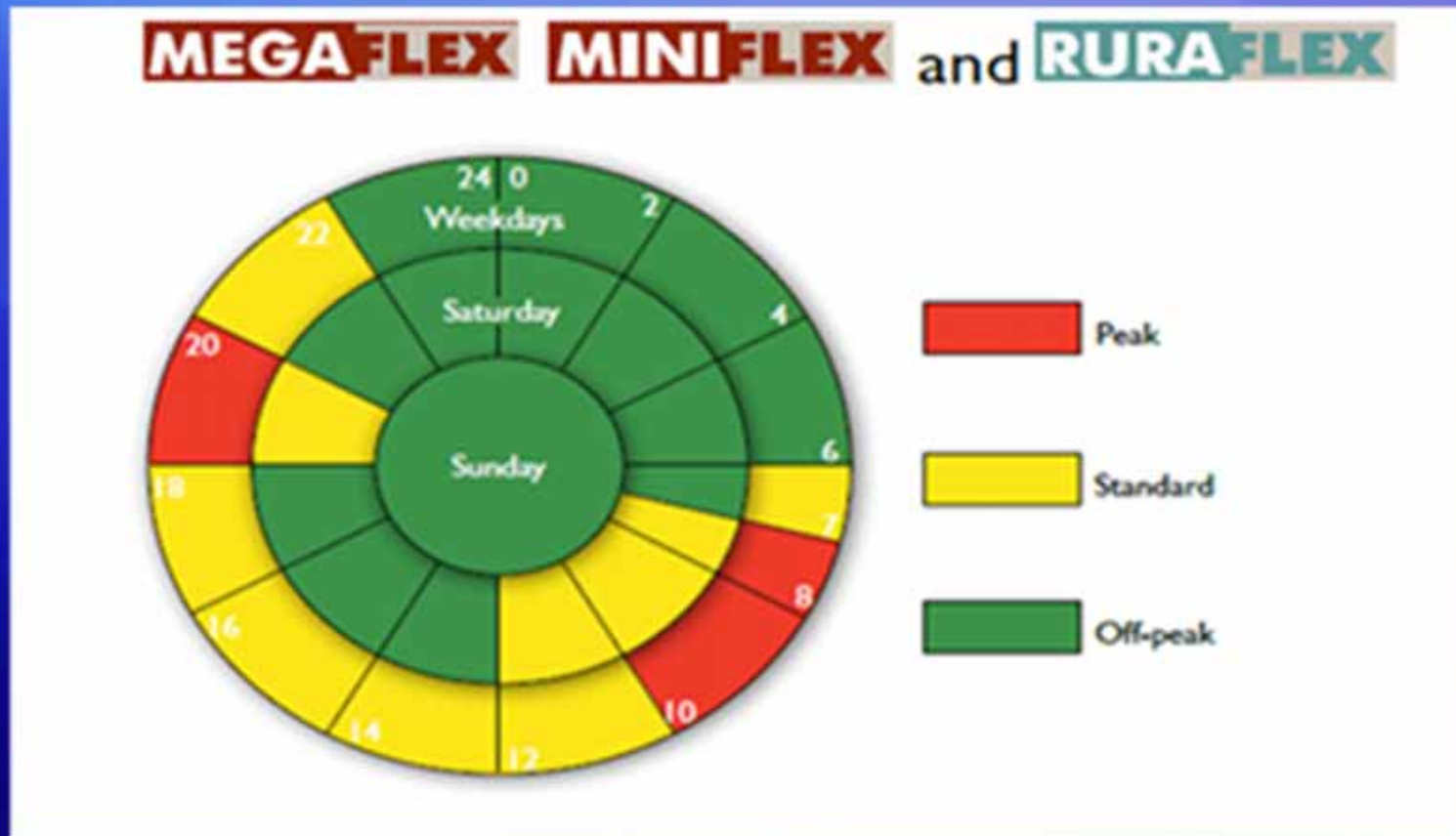
Winelands Lodges

Golf Club

Wine Farm

Estate Residential

ESKOM TIME OF USE TARIFF PERIODS



ELECTRICITY – PRE 2012

- Flat rate throughout the year
- Low awareness of peak & off-peak periods
- Responsible users subsidise others
- Cash-flow challenges for the HOA during winter
- Conventional volume meters

DATE	INTERVENTION	EXPECTED OUTCOME	COMMENTS
2012	Increased winter and decreased summer tariffs to match Eskom's tariff profile	<ul style="list-style-type: none"> Improvement of HOA cash-flow during winter months 	<ul style="list-style-type: none"> The conventional meters still read only total volume consumed at month end
2012	Eskom's Residential Mass Rollout offered LED downlighters, geyser timers and showerheads	<ul style="list-style-type: none"> Reduced consumption 	<ul style="list-style-type: none"> Approximately 50 households participated
Sep 2013	Installation of smart meters	<ul style="list-style-type: none"> Remote meter reading Internet access to consumption Reverse metering for solar installations Efficient management of electricity Improved meter accuracy 	<ul style="list-style-type: none"> Smart meters were installed and paid by the HOA Meter-reading contract terminated
Nov 2013	Acceptance of Critical Peak Day Tariff Pilot from Eskom on the Eskom purchase tariff	<ul style="list-style-type: none"> Lower purchase cost of electricity from Eskom 	<ul style="list-style-type: none"> Residents were asked to reduce consumption on Critical Peak Days, but it did not affect their individual accounts
Apr 2014	Introduction of Time of Use tariffs to all users on the Estate	<ul style="list-style-type: none"> Encourage shifting of consumption out of peak hours 	<ul style="list-style-type: none"> Electricity is cheaper outside the peak hours Low volume consumers no longer subsidise high volume consumers Consumers who shift consumption away from peak hours, reduce their own cost and it has an impact on the overall purchase cost from Eskom Consumers are able to monitor their consumption patterns on the internet
Apr 2014	Inclusion of Critical Peak Day Impact on tariffs to all users on the Estate	<ul style="list-style-type: none"> Lower cost of electricity to those residents that respond to the pricing signal 	<ul style="list-style-type: none"> Lower price for 348 days of the year with high pricing for the other 17 Critical Peak Days. Eskom gives 24 hours' notice of a CPD
Early 2015	Guidelines available for photo voltaic installations	<ul style="list-style-type: none"> Reduction in electricity purchases from Eskom Less dependence on Eskom power especially during load shedding 	<ul style="list-style-type: none"> Set of technical, commercial and aesthetic requirements being developed

ESTATE ELECTRICITY PLAN - 1

DATE	INTERVENTION	EXPECTED OUTCOME	COMMENTS
2012	<ul style="list-style-type: none">Increased winter and decreased summer tariffs to match Eskom's tariff profile	<ul style="list-style-type: none">Improvement of HOA cash-flow during winter months	<ul style="list-style-type: none">The conventional meters still read only total volume consumed at month end
2012	<ul style="list-style-type: none">Eskom's Residential Mass Rollout offered LED downlighters, geyser timers and showerheads	<ul style="list-style-type: none">Reduced consumption	<ul style="list-style-type: none">Approximately 50 households participated

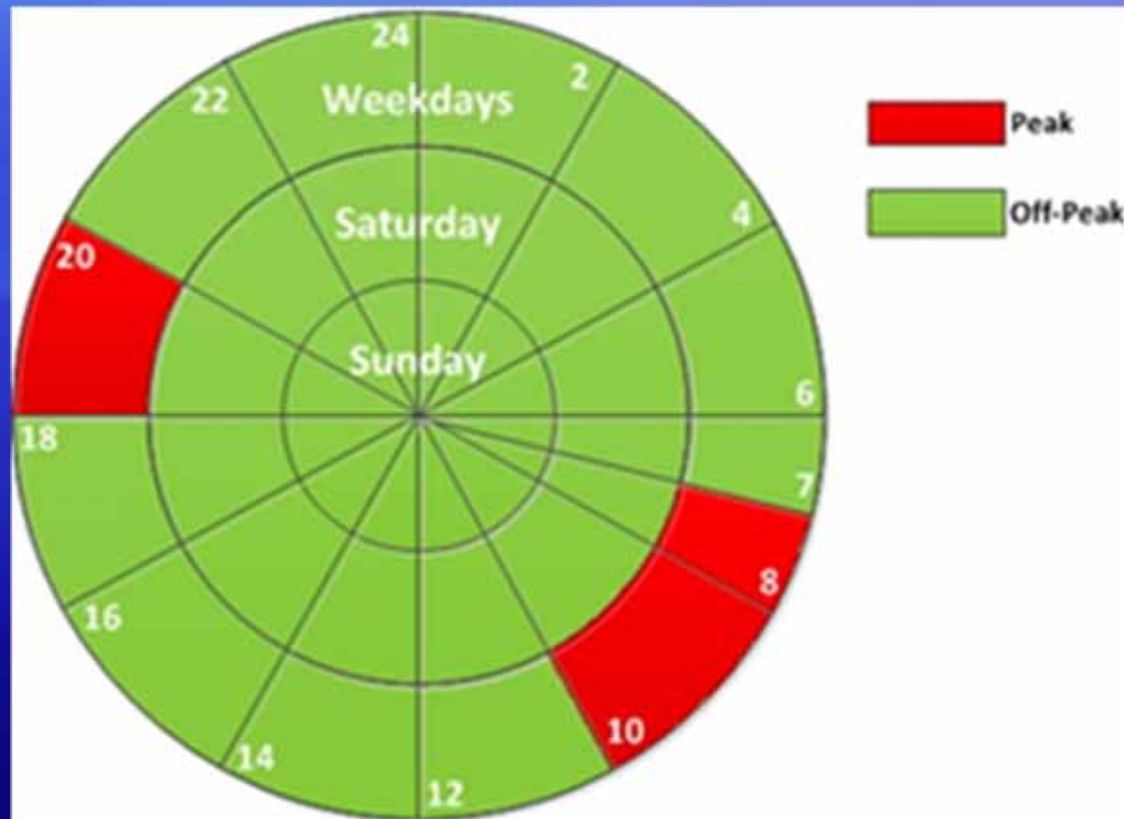
ESTATE ELECTRICITY PLAN - 2

DATE	INTERVENTION	EXPECTED OUTCOME	COMMENTS
Sep 2013	<ul style="list-style-type: none"> Installation of smart meters 	<ul style="list-style-type: none"> Remote meter reading Internet access to consumption Reverse metering for solar installations Efficient management of electricity Improved meter accuracy 	<ul style="list-style-type: none"> Smart meters were installed and paid by the HOA Meter-reading contract terminated
Nov 2013	<ul style="list-style-type: none"> Acceptance of Critical Peak Day Tariff Pilot from Eskom on the Eskom purchase tariff 	<ul style="list-style-type: none"> Lower purchase cost of electricity from Eskom 	<ul style="list-style-type: none"> Residents were asked to reduce consumption on Critical Peak Days, but it did not affect their individual accounts

ESTATE ELECTRICITY PLAN - 3

DATE	INTERVENTION	EXPECTED OUTCOME	COMMENTS
Apr 2014	<ul style="list-style-type: none"> Introduction of Time of Use tariffs to all users on the Estate 	<ul style="list-style-type: none"> Encourage shifting of consumption out of peak hours 	<ul style="list-style-type: none"> Electricity is cheaper outside the peak hours Low volume consumers no longer subsidise high volume consumers Consumers who shift consumption away from peak hours, reduce their own cost and it has an impact on the overall purchase cost from Eskom Consumers are able to monitor their consumption patterns on the internet
Apr 2014	<ul style="list-style-type: none"> Inclusion of Critical Peak Day Impact on tariffs to all users on the Estate 	<ul style="list-style-type: none"> Lower cost of electricity to those residents that respond to the pricing signal 	<ul style="list-style-type: none"> Lower price for 348 days of the year with high pricing for the other 17 Critical Peak Days. Eskom gives 24 hours' notice of a CPD

DE ZALZE TIME OF USE TARIFF PERIODS



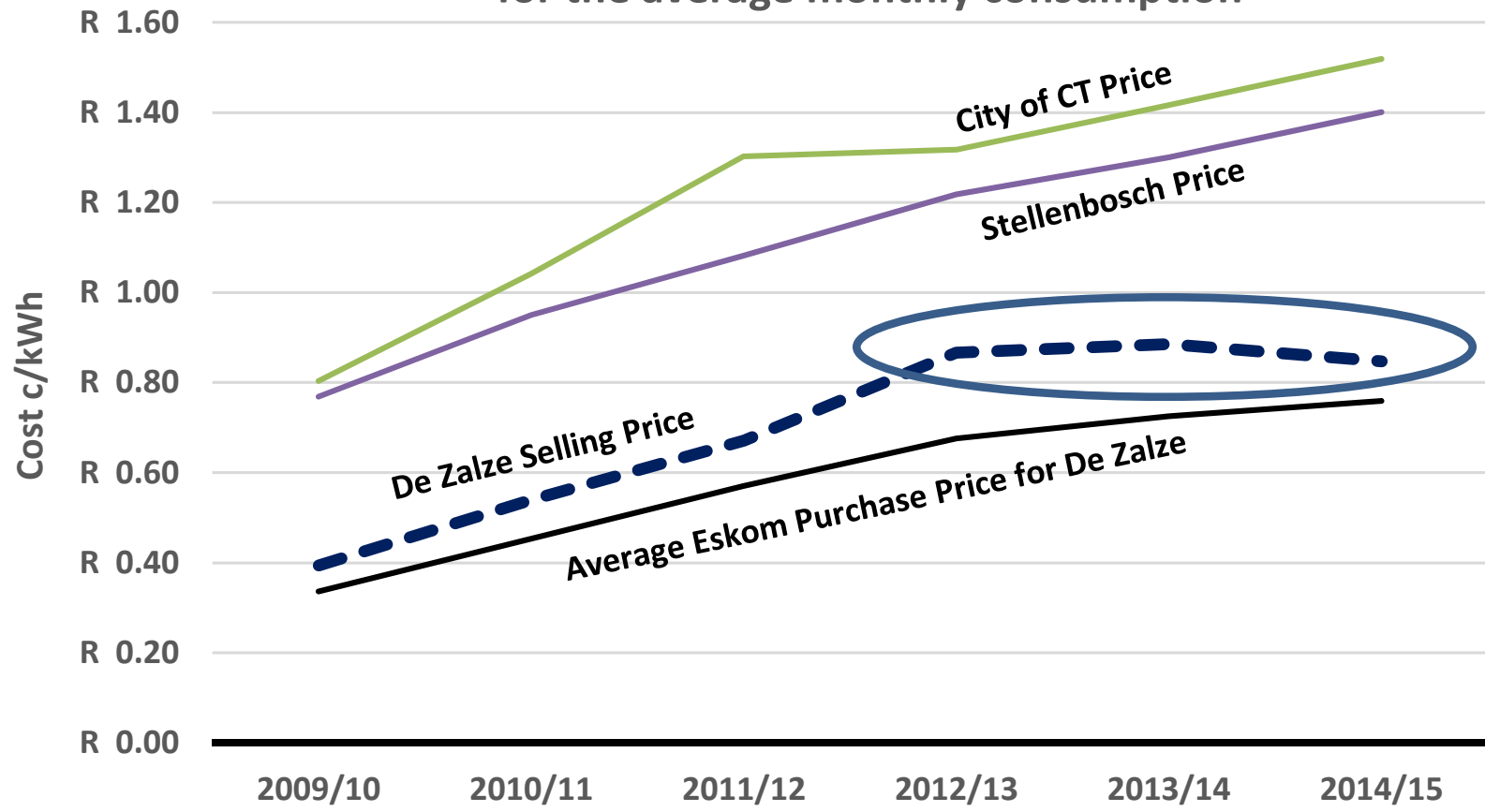
ESTATE ELECTRICITY PLAN - 4

DATE	INTERVENTION	EXPECTED OUTCOME	COMMENTS
Early 2015	Guidelines available for photo voltaic & battery backup installations	<ul style="list-style-type: none">• Reduction in electricity purchases from Eskom• Less dependence on Eskom power especially during load shedding	<ul style="list-style-type: none">• Set of technical, commercial and aesthetic requirements being developed

EVALUATION PARAMETERS

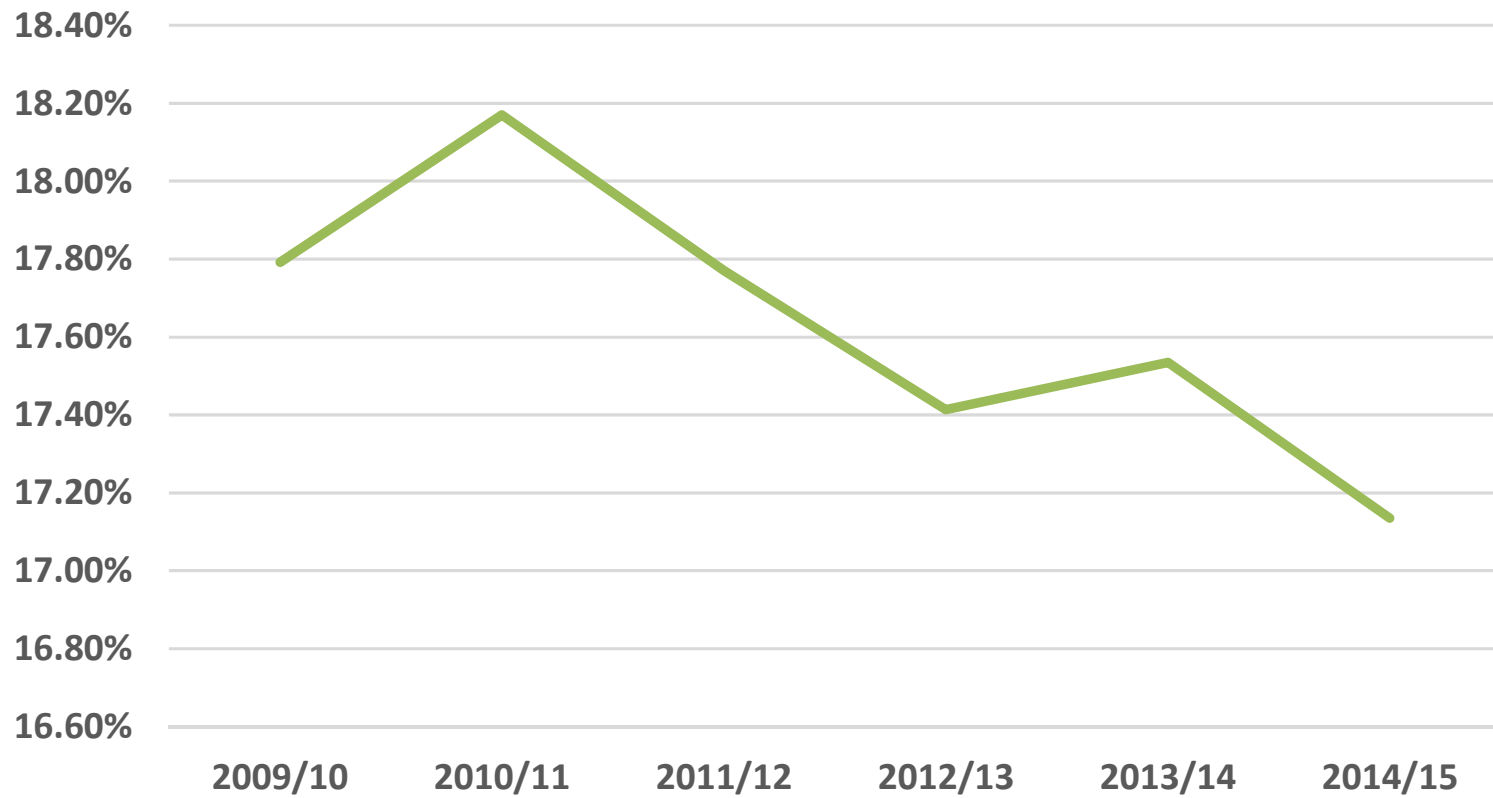
- **Measurement of electricity cost:**
 - Total consumption trend
 - Average Eskom purchase price
 - Average price to the estate's residential consumer
 - i. Comparison with City of Cape Town
 - ii. Comparison with Stellenbosch Municipality
 - Peak % consumption trend
- **Improved energy efficiency**
 - Reduced total consumption
 - Reduced average monthly consumption

Residential Cost of Electricity per kWh calculated for the average monthly consumption

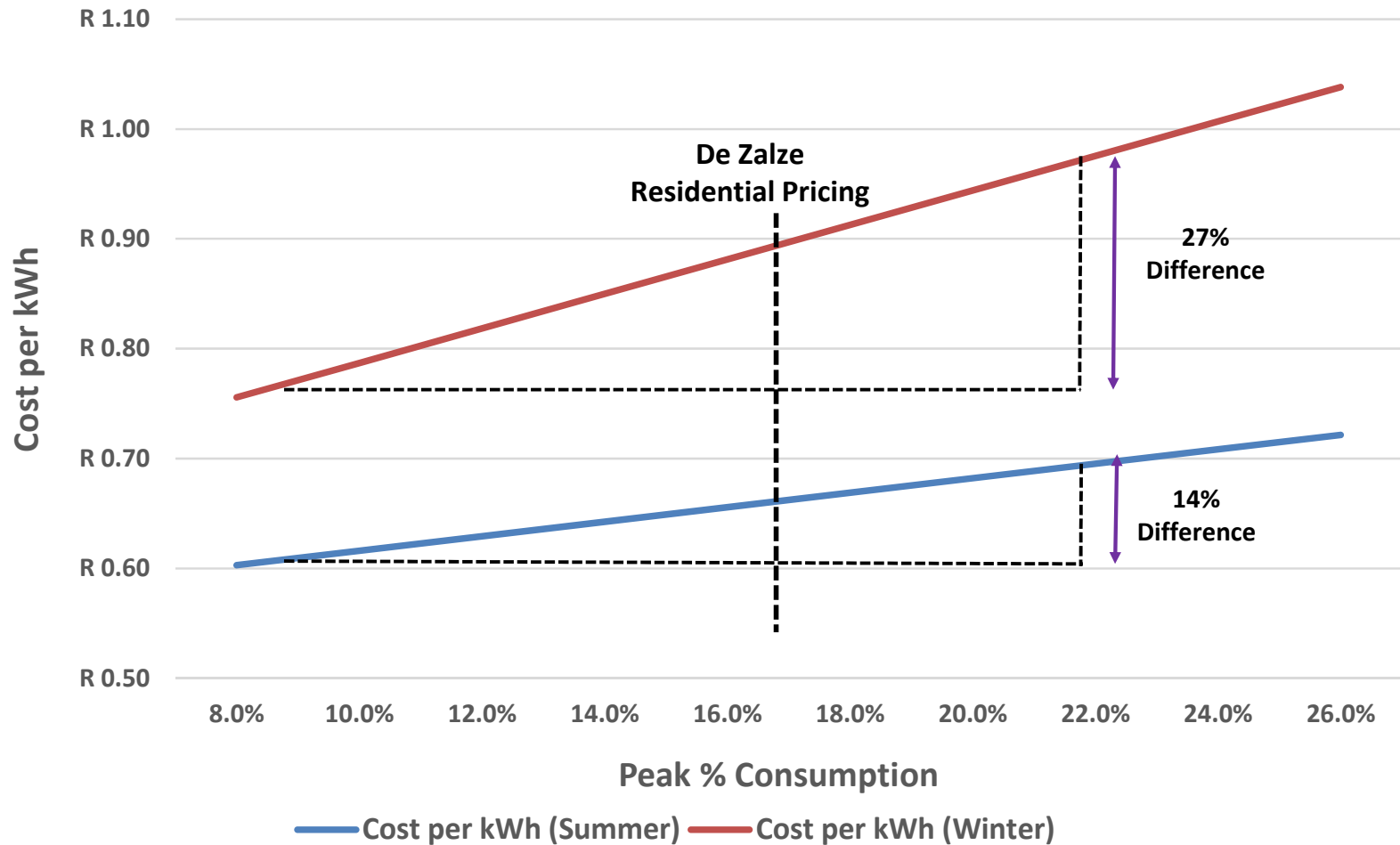


	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
Estate Average Purchase Cost of Electricity	R 0.34	R 0.45	R 0.57	R 0.68	R 0.73	R 0.78
City of CT Average Consumer Cost of Electricity	R 0.80	R 1.03	R 1.30	R 1.32	R 1.42	R 1.53
Stellenbosch Municipality Avg Consumer Cost of Electricity	R 0.77	R 0.95	R 1.09	R 1.22	R 1.31	R 1.41
Estate Average Consumer Cost of Electricity	R 0.39	R 0.54	R 0.67	R 0.87	R 0.89	R 0.86

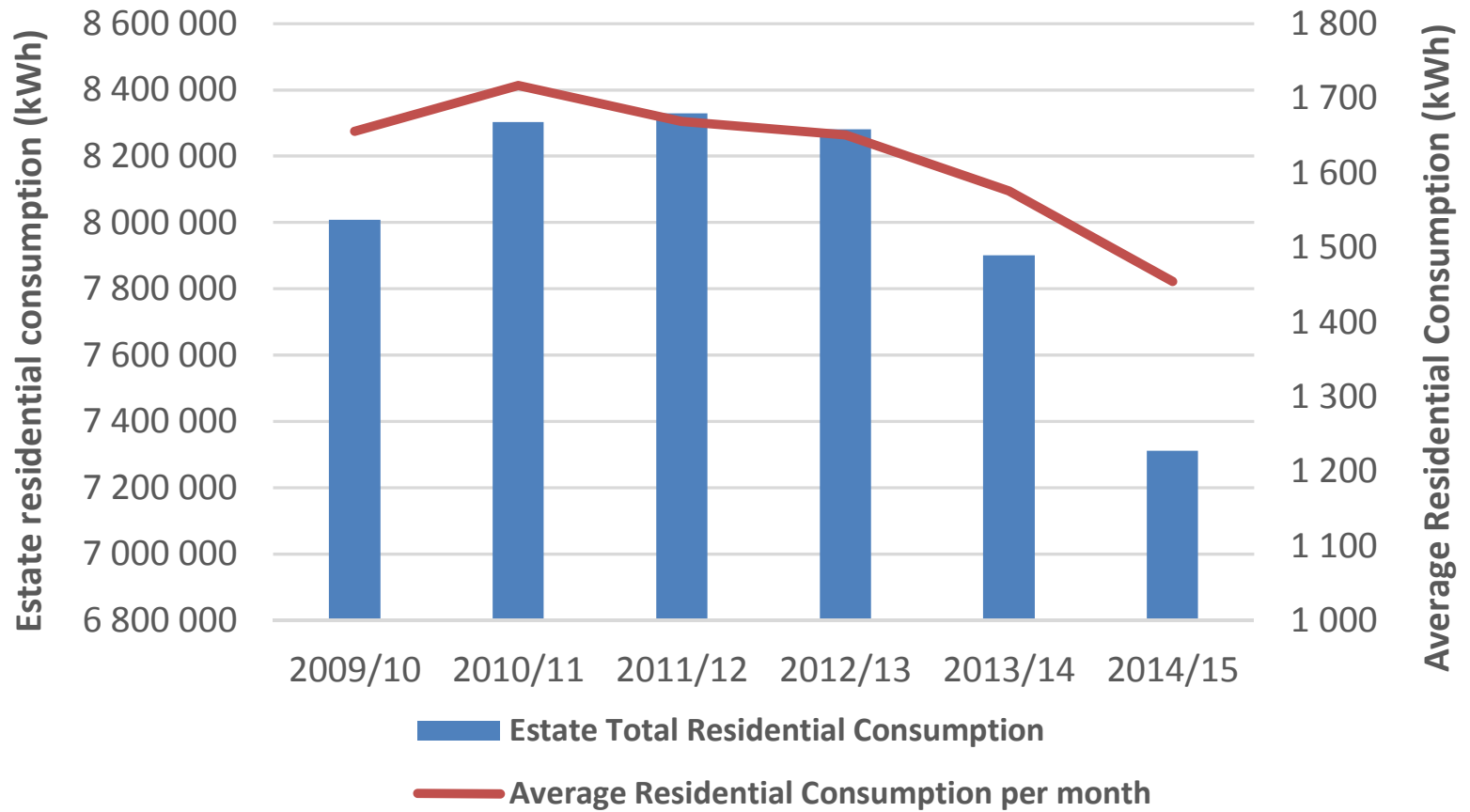
Total Estate peak usage as % of total



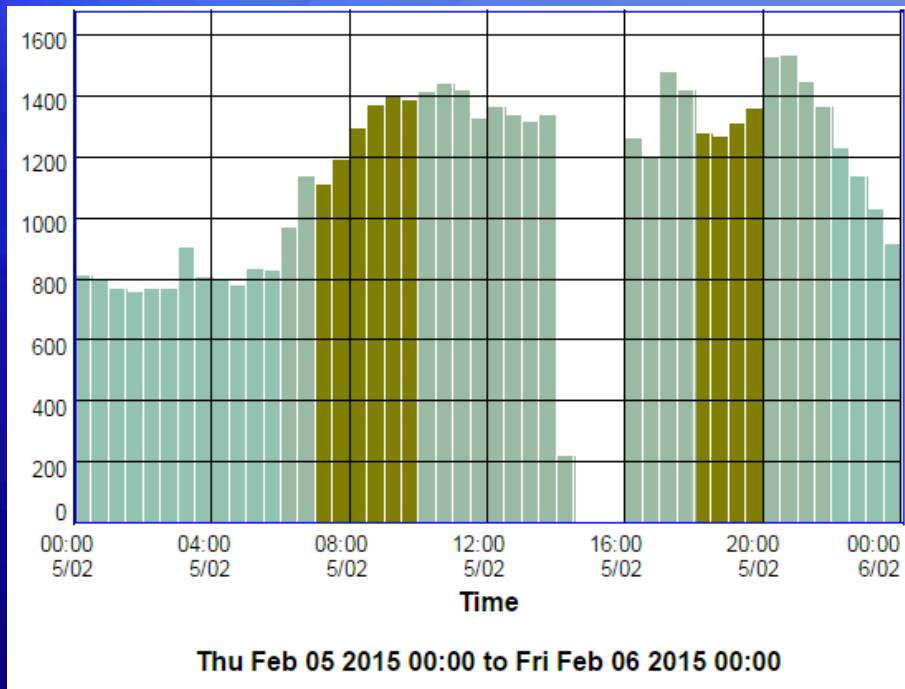
Estate Electricity Cost per kWh vs Peak % Consumption



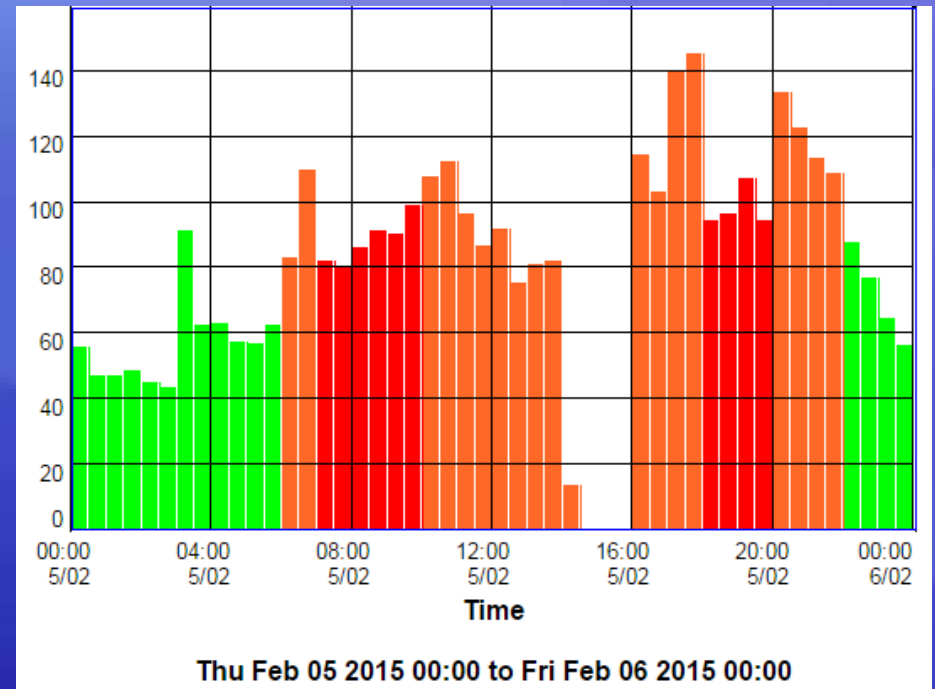
Estate Annual Residential Electricity Consumption



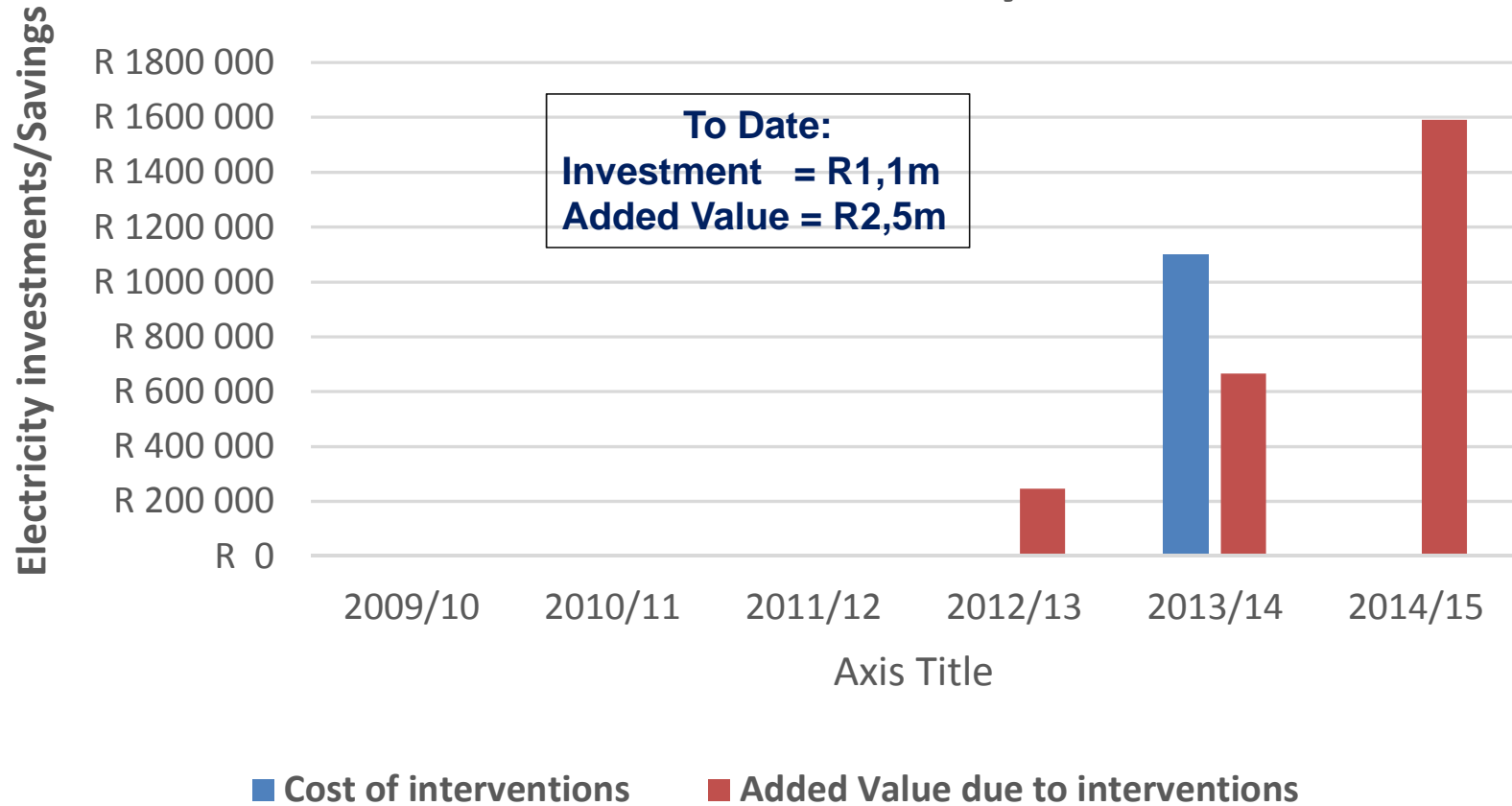
TOTAL DE ZALZE CONSUMPTION PROFILE



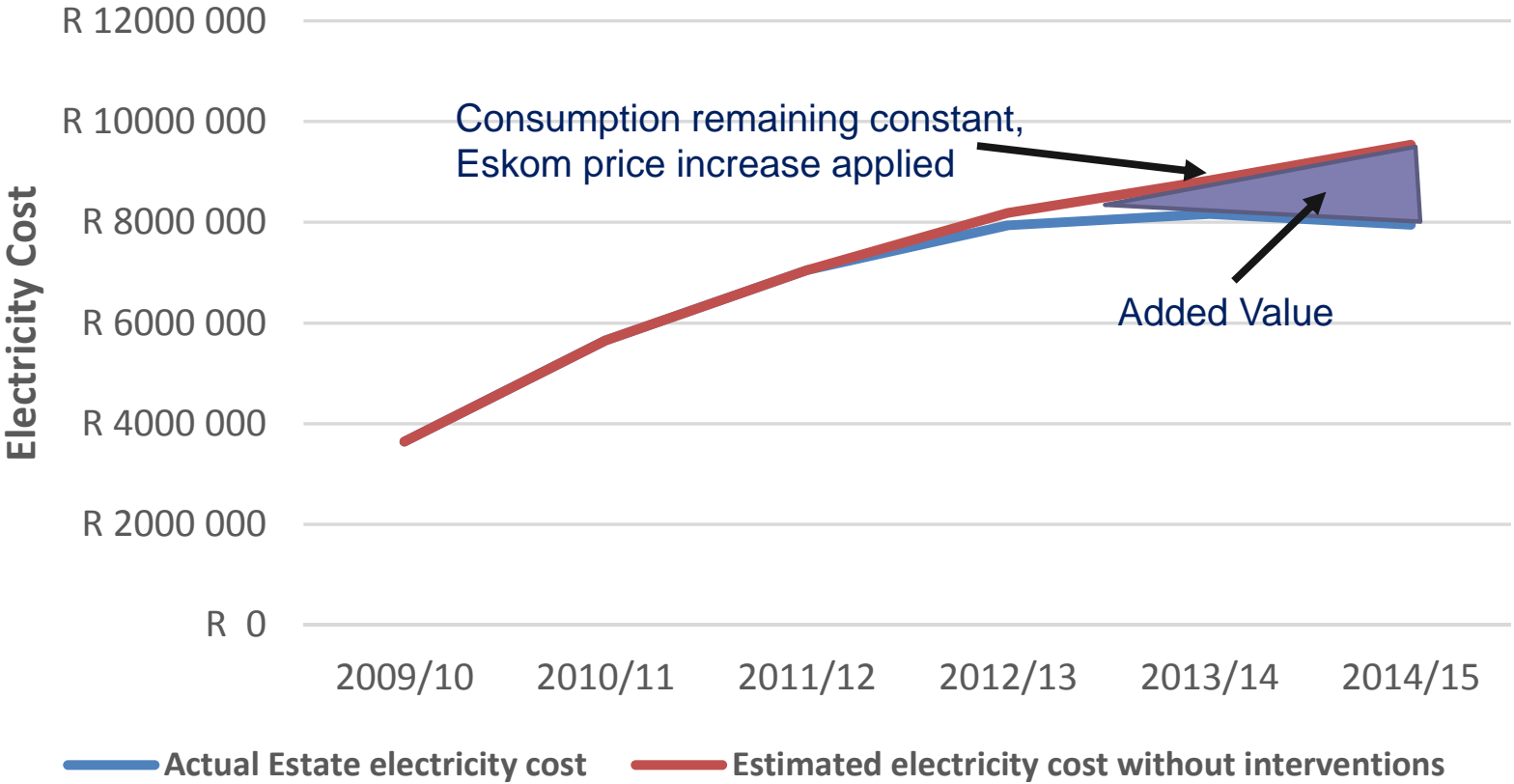
“VILLAGE A” CONSUMPTION PROFILE



Added Value of Electricity Interventions



Cost of Electricity after Interventions



CONCLUSION

- **Electricity interventions:**
 - Results showing positive trend
 - Need wider participation
- **Equivalent Cost Reduction of R2.5m vs Investment of R1,1m in meters in first 3 years**
 - This will increase further over next few years
- **Focus is now on methods to deal with Eskom load shedding**

ACKNOWLEDGEMENTS

- **De Zalze Estate for allowing that the results may be shared**
- **Gateway Utility Solutions for sponsorship of presentation**

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