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# City of Johannesburg State of Energy Report (2008)

UEMP ANNUAL CONFERENCE, 20 – 21 May 2009

# PRESENTATION OUTLINE



1. INTRODUCTIONS
2. ENERGY USE PER SECTOR
3. ENERGY SECTORAL EMISSIONS
4. HOUSEHOLD ENERGY SUPPLY
5. LARGE BUILDINGS ENERGY USE
6. SUPPLY SECTOR
7. WAY FORWARD
8. CONCLUDING REMARKS

# 1. INTRODUCTIONS

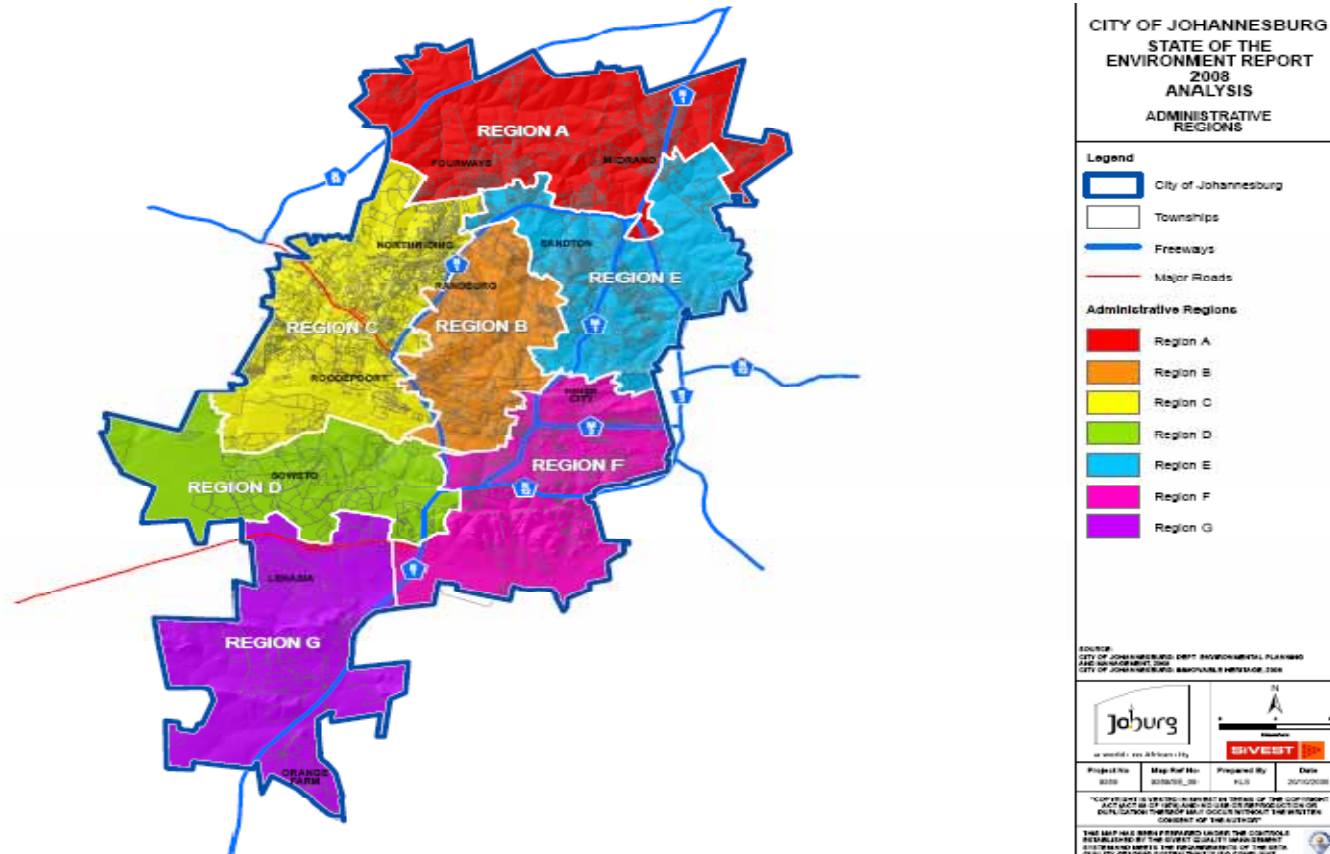


Figure 1: Map showing the administrative regions of the City of Joburg.

## Introductions cont.



- The first State of Energy Report (SoER) for the City of Johannesburg (CoJ)
- The SoER was built upon the intentions and objectives of the City's Integrated Development and Integrated Environmental Management Plans.
- It gives impetus from both the National Energy Efficiency Strategy and National White Paper on Renewable Energy of South Africa.
- The City has identified urban and peri-urban energy use as a major contributing factor to Climate Change and local based pollutant levels within South Africa
- The main objective of the SoER is to provide a background and bases for the development of an Energy Strategy for CoJ.

# What is the State of Energy Report?

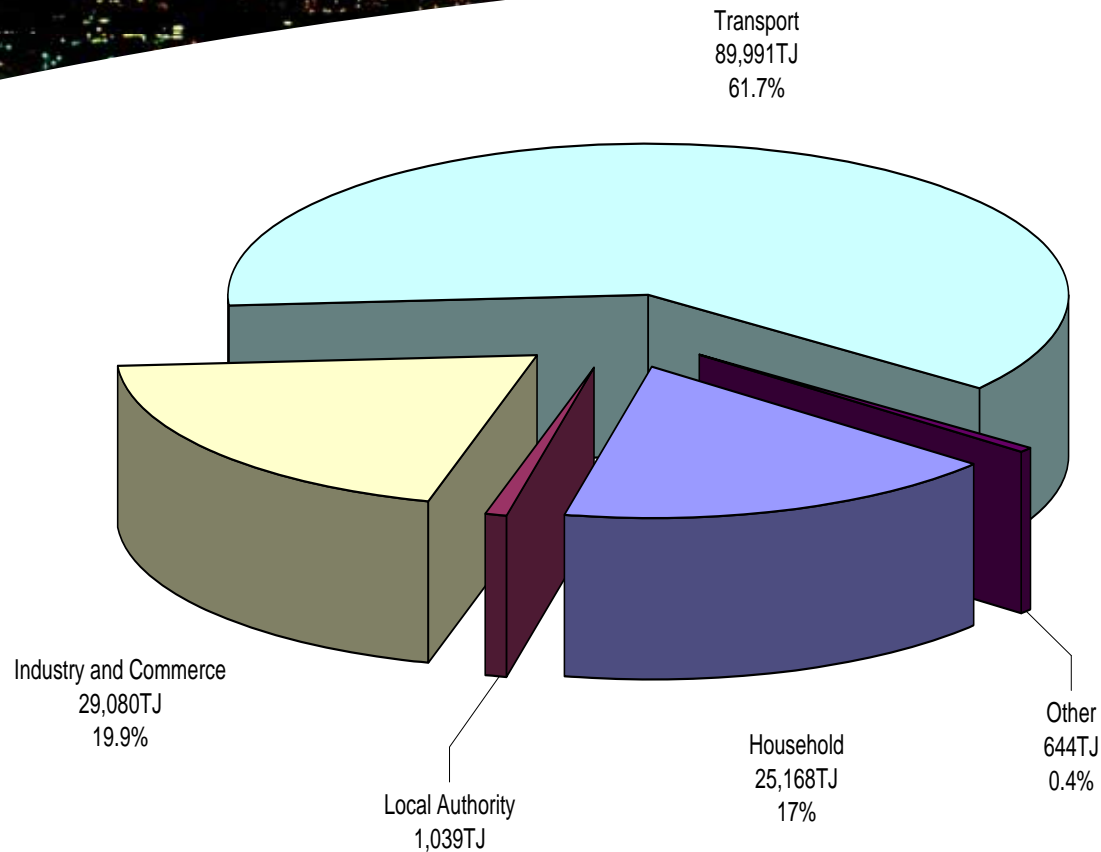


- It provides a snapshot overview of the supply and demand characteristics across all sectors, within the bounds of the Municipality – *Energy Balance*
- It gives detailed sector-by-sector energy usage synopses
  - Trends
  - Data gaps
  - Links to other initiatives
  - Energy efficiency .....etc.
- It informs strategy at Municipal level



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## 2. ENERGY USE PER SECTOR (TG/ANNUM)





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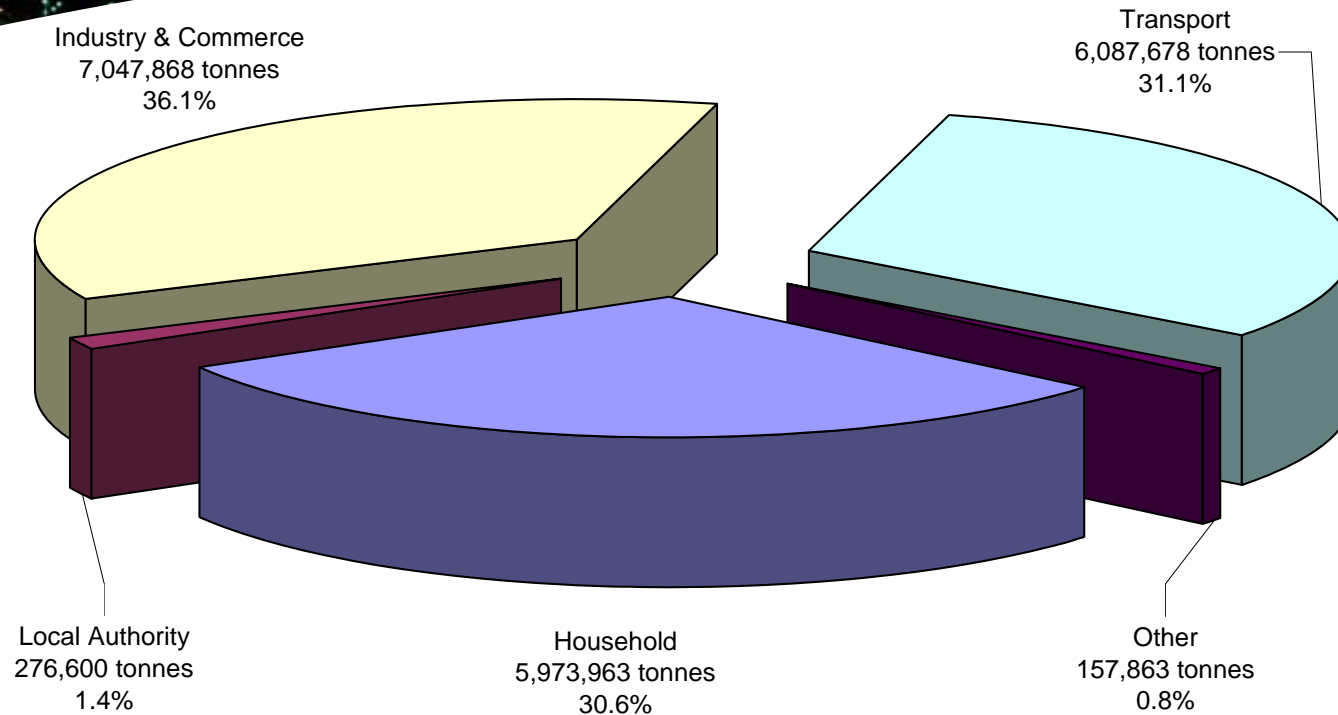


## 3. ENERGY SECTORAL EMISSIONS

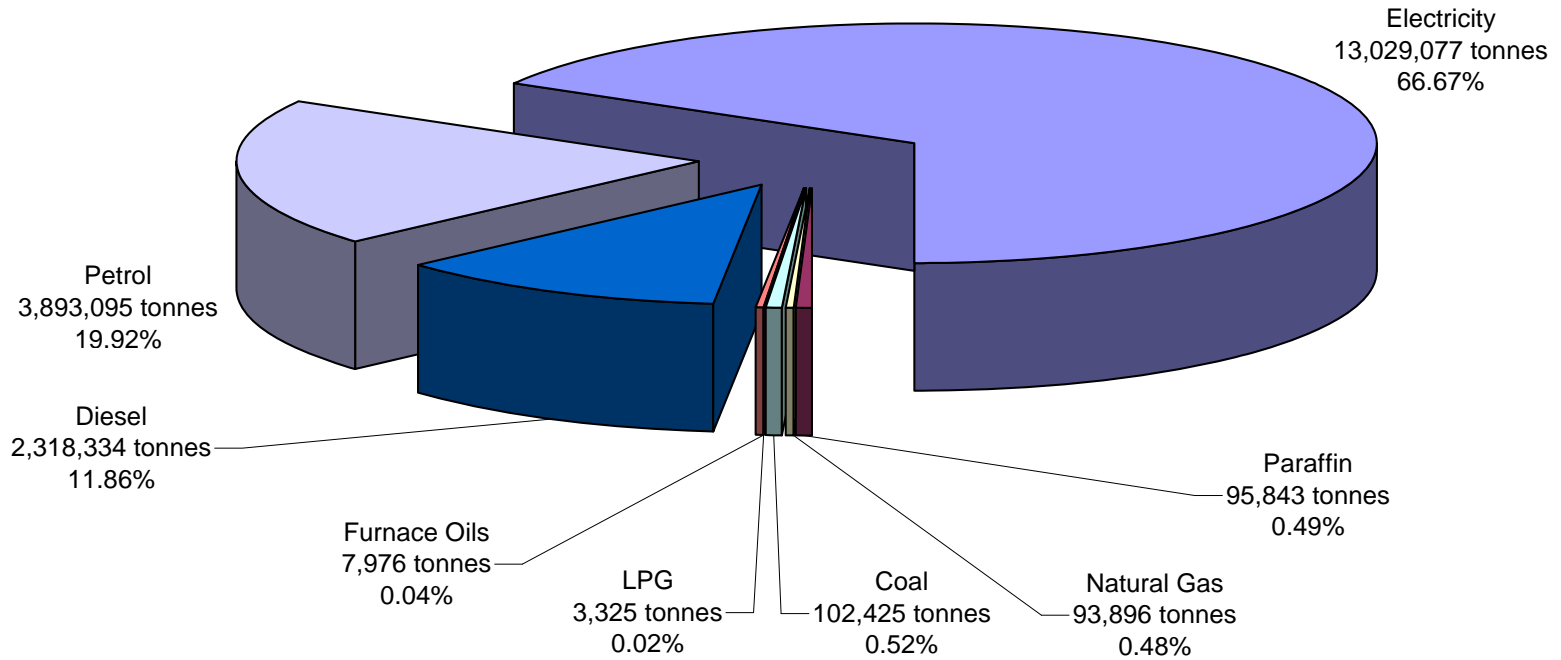


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# CO<sub>2</sub> emissions per sector (TJ/annum)



# CO<sub>2</sub> emissions by energy type



## 4. HOUSEHOLD ENERGY SUMMARY



Energy Carrier	MWh/annum	GJ/annum	% of Total
Electricity	6,021,542	21,677,500	86
Paraffin	476,670	1,716,000	7
Egoli Gas	66,390	239,000	1
Coal	320,830	1,155,000	5
Fuelwood	105,700	380,000	2
<b>Total</b>	<b>6,991,132</b>	<b>25,167,500</b>	<b>100</b>

## Expenditure on different forms of energy

Energy Source	Soweto (2007)		Alexandra (2007)	
	Monthly Spend, R	%	Monthly Spend, R	%
Electricity	28.30	14.5	86.16	36.3
Paraffin	94.91	48.3	66.36	28.0
Wood	3.59	1.8	10.48	4.4
Gas	12.80	6.5	6.21	2.6
Coal	55.24	28.1	66.95	28.2
Other	1.67	0.8	1.23	0.5
<b>Total</b>	<b>196.51</b>	<b>100</b>	<b>237.39</b>	<b>100</b>

## 5. LARGE BUILDINGS ENERGY USE

Building name	Energy GJ	Energy kWh/a	Floor Area m <sup>2</sup>	EI GJ/m <sup>2</sup> /a
Metro Centre	20,844	5,790,000	55,000	0.39
Sandton Civic Centre	4,565	1,268,000	7,824	0.58
Jabulani Civic Centre	2,297	638,000	6,000	0.38
Roodepoort Civic Centre	713	198,000	2,880	0.25
Newtown	900	250,000	2,505	0.36
Roodepoort City Hall	1,174	326,000	2,184	0.54
<b>Total</b>	<b>30,492</b>	<b>8,470,000</b>	<b>76,357</b>	<b>0.40</b>

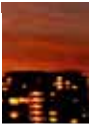
# Local Authority Energy Summary

Municipal Sector	Energy GJ	Energy MWh	Energy %	CO <sub>2</sub> tonnes
Buildings	103,334	28,704	1.5	27,498
Water & Sanitation	648,000	180,000	9.5	172,440
Streetlights & Signals	288,000	80,000	4.2	76,640
Distribution Losses	5,776,473	1,604,576	84.8	1,537,184
<b>Total</b>	<b>6,815,807</b>	<b>1,893,280</b>	<b>100</b>	<b>1,813,762</b>

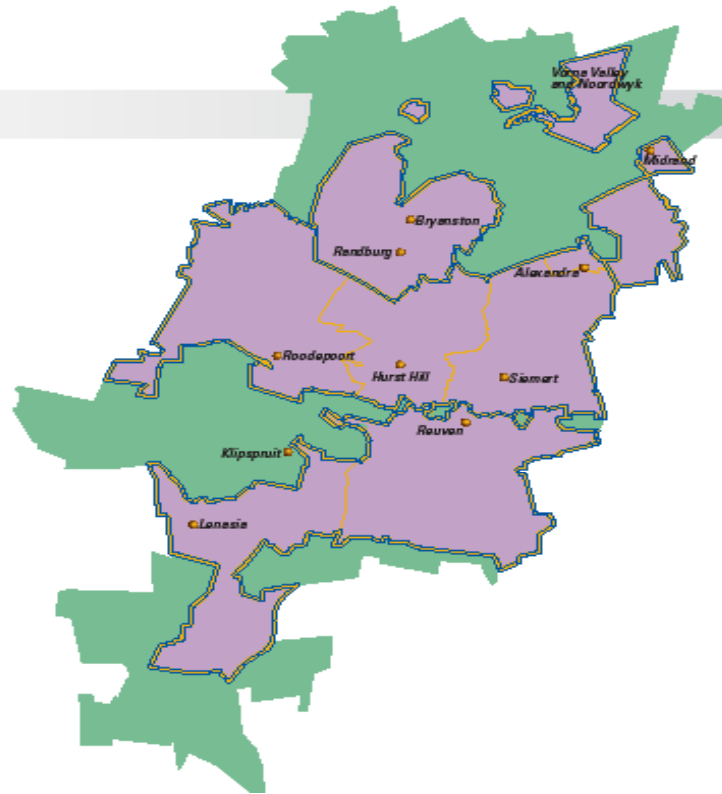


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# 6. SUPPLY SECTOR



## City Power Johannesburg (Pty) Limited Areas of supply



### LEGEND

- Depot sites**
- Alexandra
  - Reuven (Head office)
  - Hurst Hill
  - Lenasia
  - Midrand
  - Randburg
  - Roodepoort
  - Bryanston
  - Klipspruit
  - Siemert Road
- City Power area  
■ Eskom area of supply

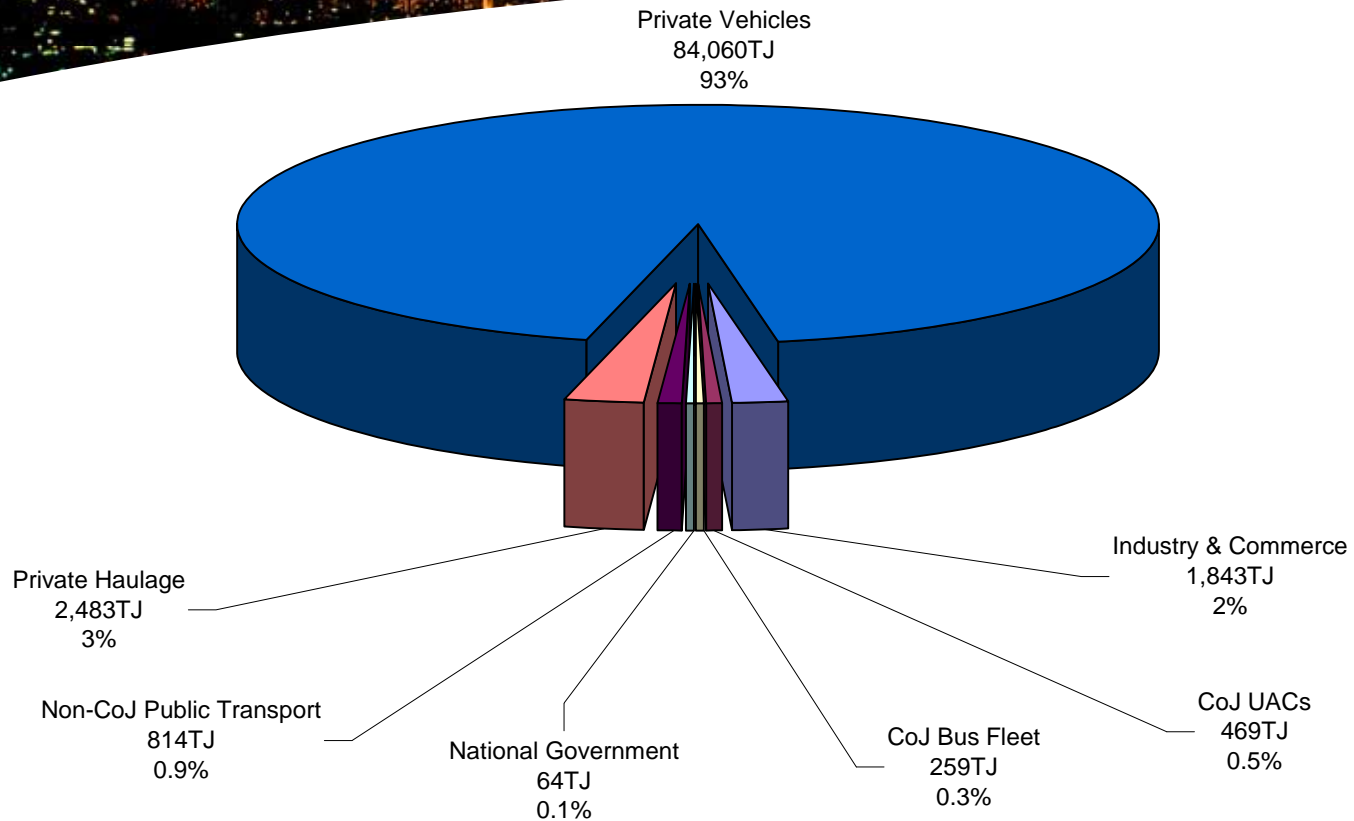
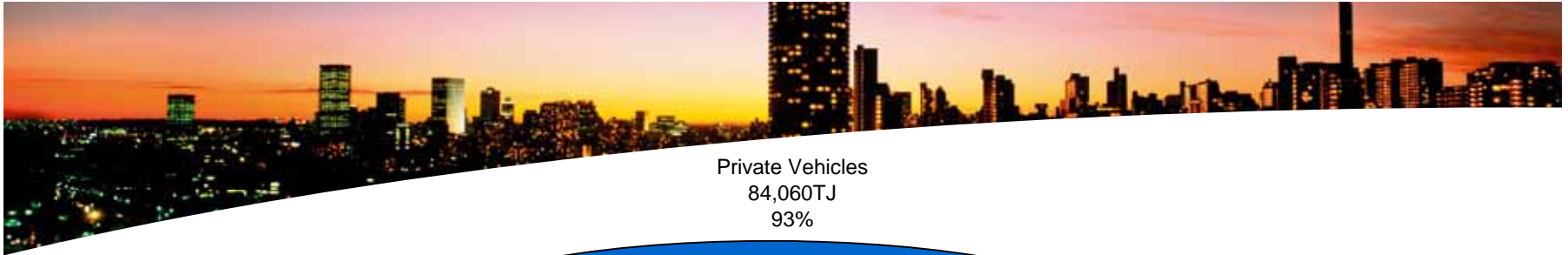


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# Industrial and Commercial Energy Supply

Energy Carrier/Source	Usage Statistics		
	Units	TJ	TJ %
Elec: Business, Commerce & Light Industry	4,529,292MWh	16,305	56
Elec: Medium Sized Industry	1,971,531MWh	7,098	24
Elec: Heavy Industry	629,813MWh	2,267	9
Paraffin	244,242litres	9	<1
LPG	2,134,730litres	57	<1
Coal	<i>Data Unavailable</i>		
Furnace oils	2,654,431litres	110	<1
Diesel	46,389,377litres	1,767	<1
Petrol	439,982litres	15	<1
Gas	1,451,000GJ	1,451	<1
<b>Total</b>	-	<b>29,079</b>	<b>100</b>

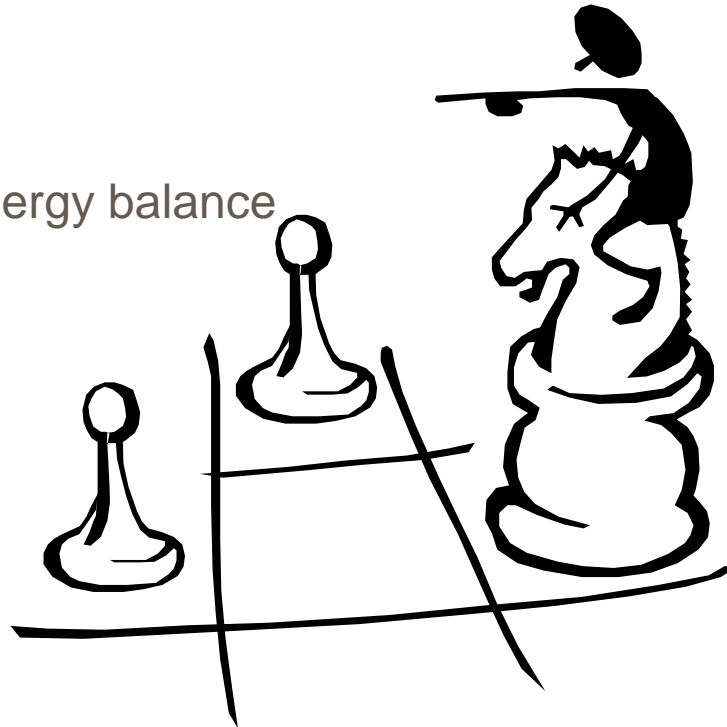
# Transport Sector Energy Summary



# 7. STRATEGIC WAY FORWARD



- Fill-in data gaps on municipal energy balance
- Draft Strategic vision and goals
- Develop Sector Action Plans
- Design a Monitoring Plan
- Implementation



## 8. CONCLUDING REMARKS



- The State of Energy Report for the City of Johannesburg would now pave a way for the development of the first Energy Strategy for the City
- The City has a lot of potential in improving energy efficiency and renewable energy uptake.
- The City has identified energy use as a major contributing factor to climate change
- The SoER was identified by the City as a key Energy Strategy input document going forward



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*THANK YOU*

**ANY QUESTIONS?**

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