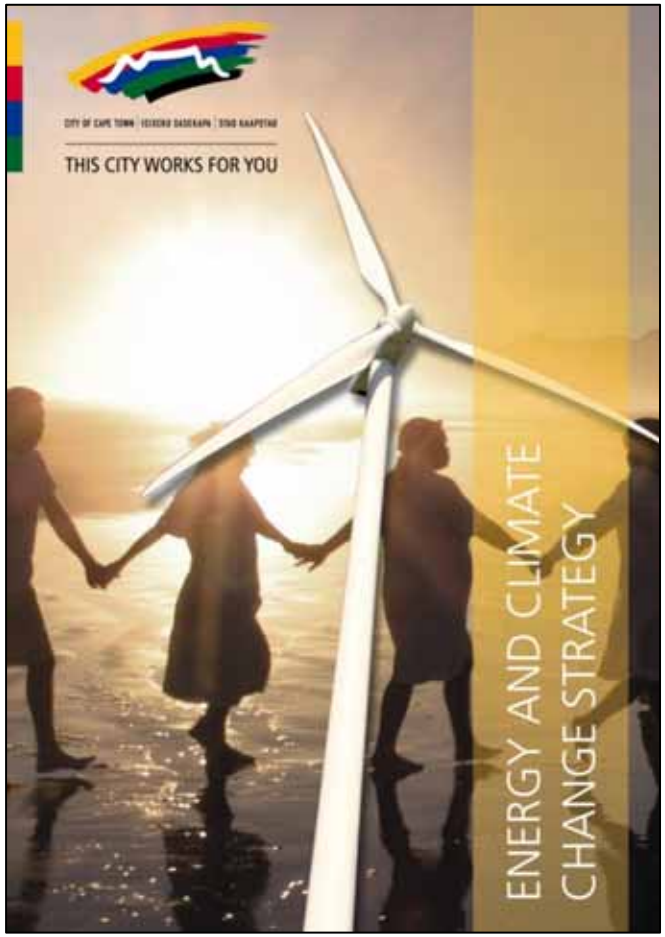
CITY OF CAPE TOWN | ISIXEKO SASEKAPA | STAD KAAPSTAD

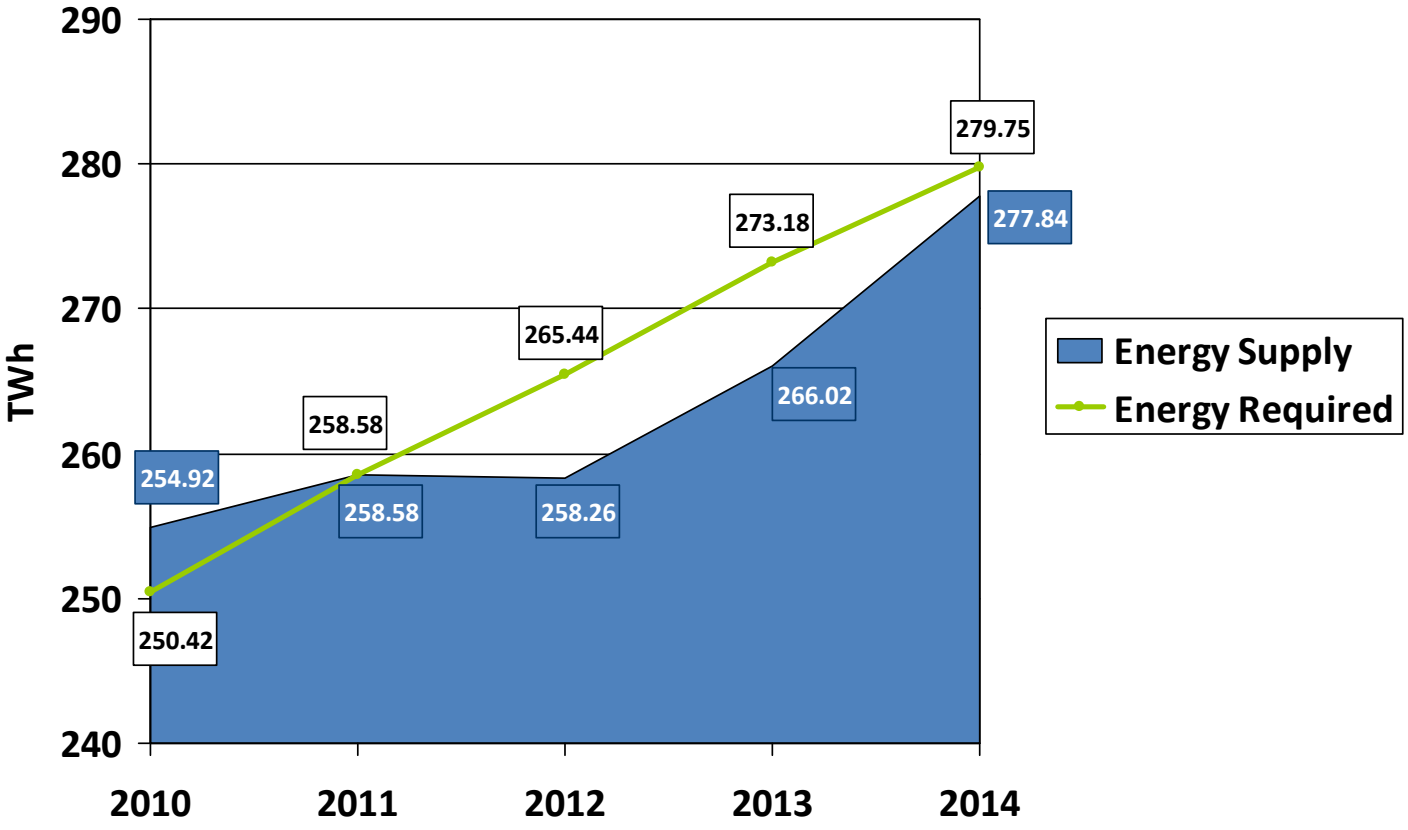



# What is the City of Cape Town doing about energy security and climate change ?

**EE Forum Sept 2010**
**Sarah Ward**
**Energy and Climate Change**
Environmental Resource Management Dept
City of Cape Town


Athlone_Implosion_Smart_Saving.wmv

# Energy Requirements and Supply for South Africa

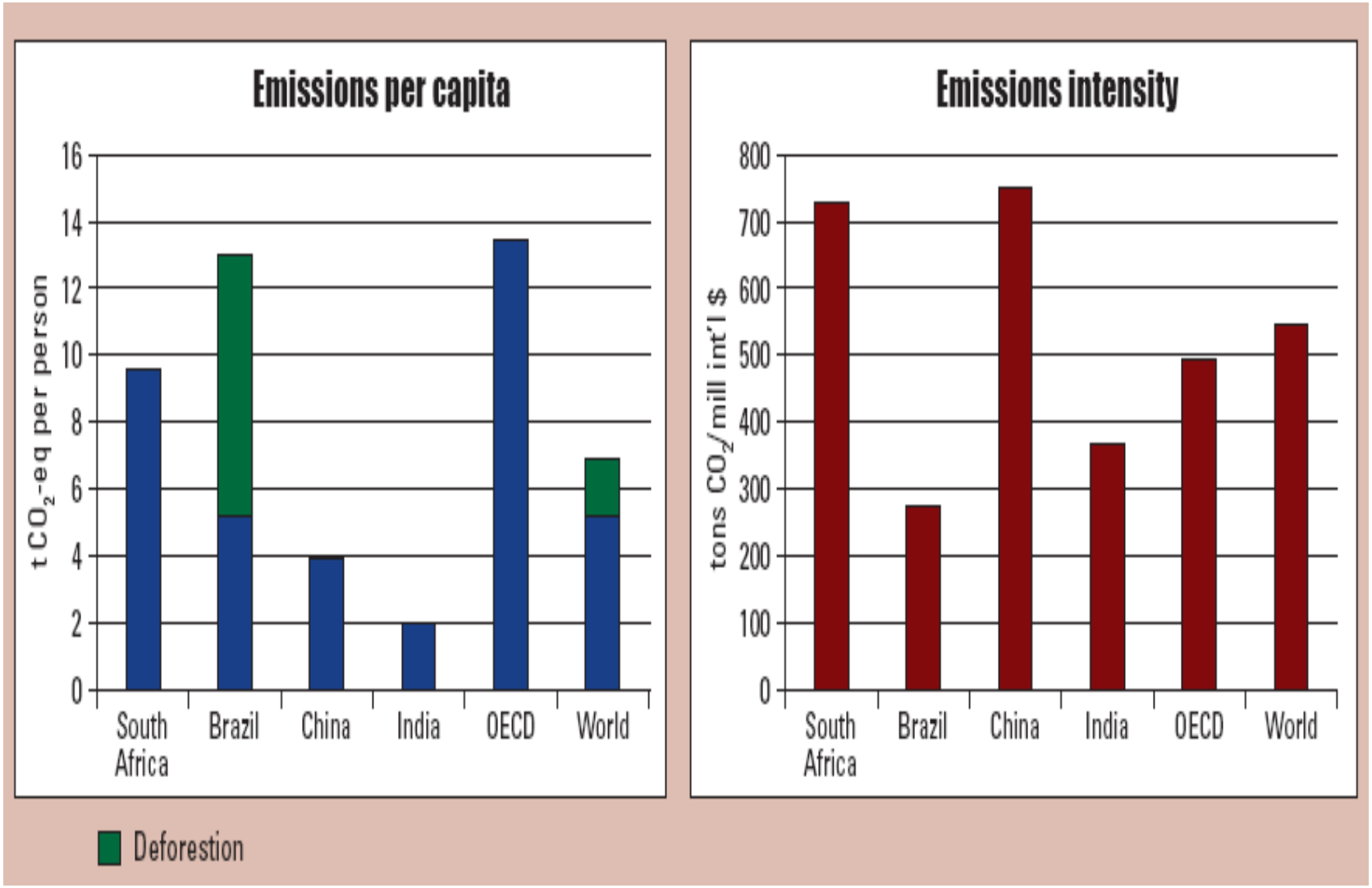



| Year | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|
| Energy Reserve Margin | 1.8% | 0.0% | -2.8% | -2.7% | -0.7% |

Source:

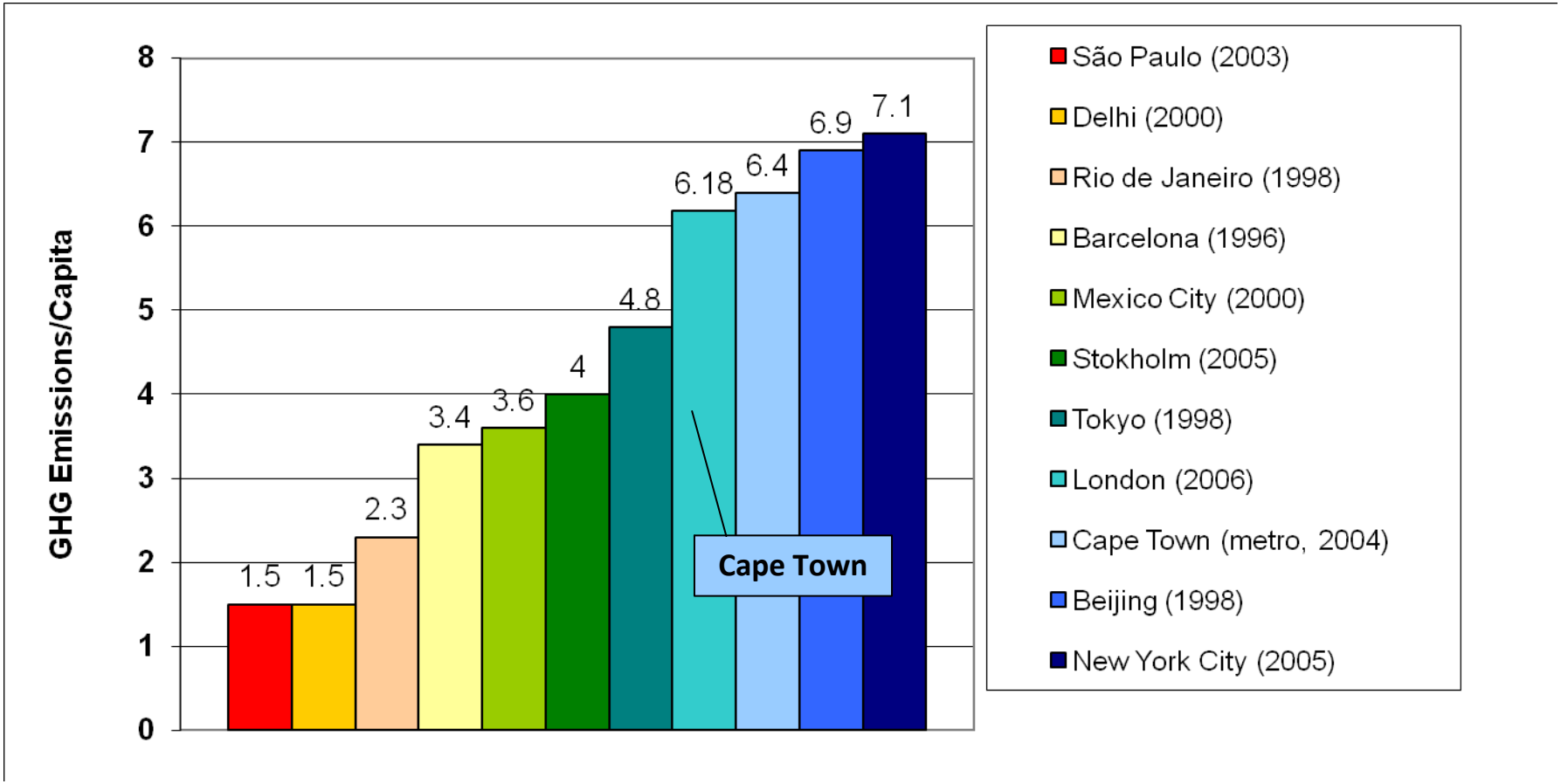
Mike Rossouw NERT

# South Africa's emissions in a global context



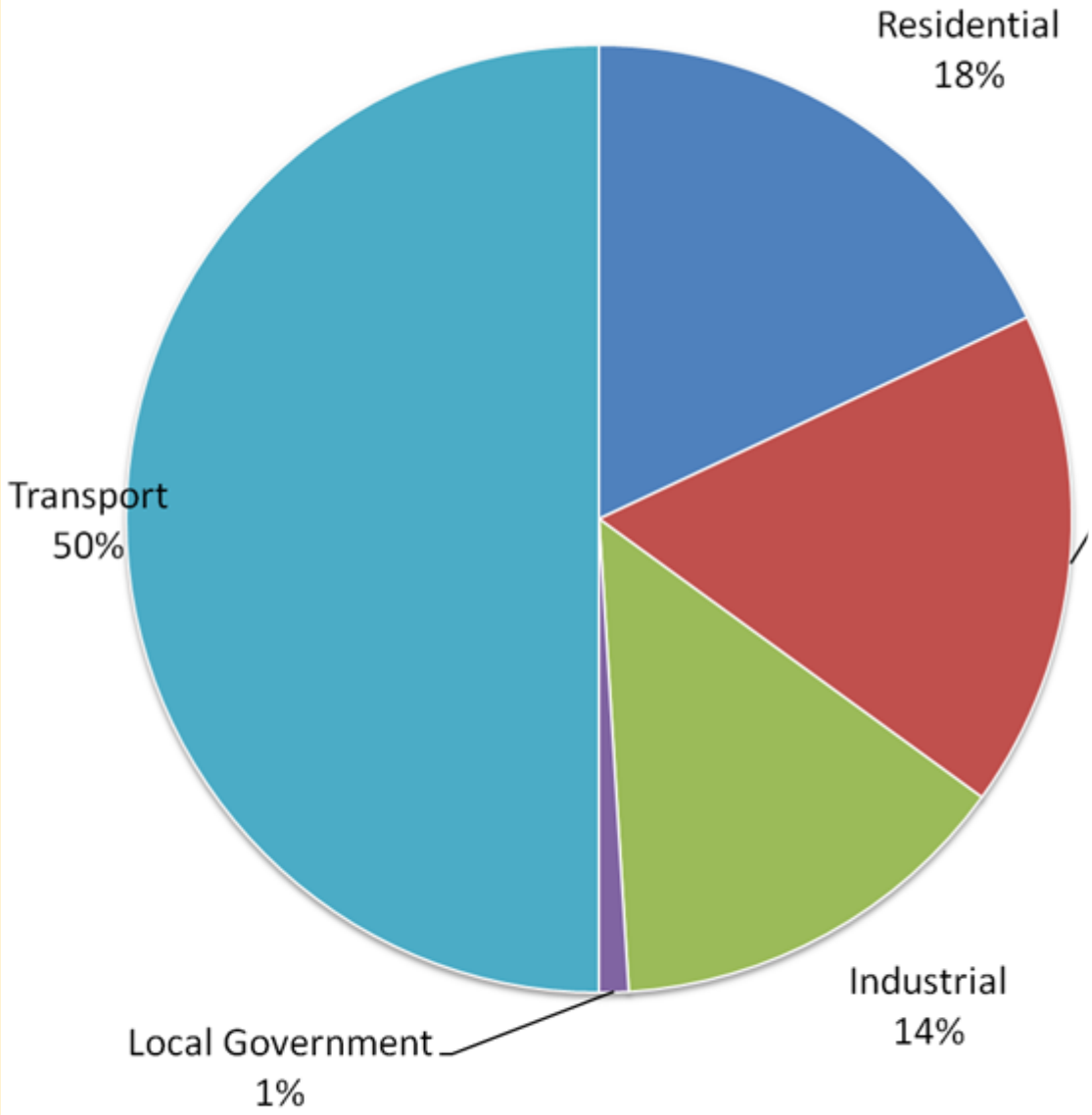

Source: LTMS Scenario, DEAT

# Cape Town Emissions in a Global Context – per capita

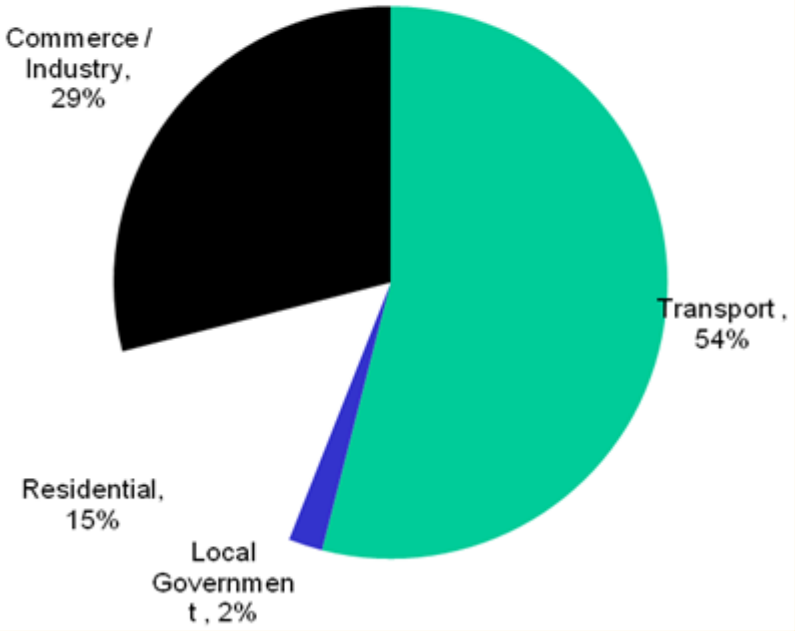



Source: Urban Areas *Carbon and Climate Governance* Patricia Romero Lankao

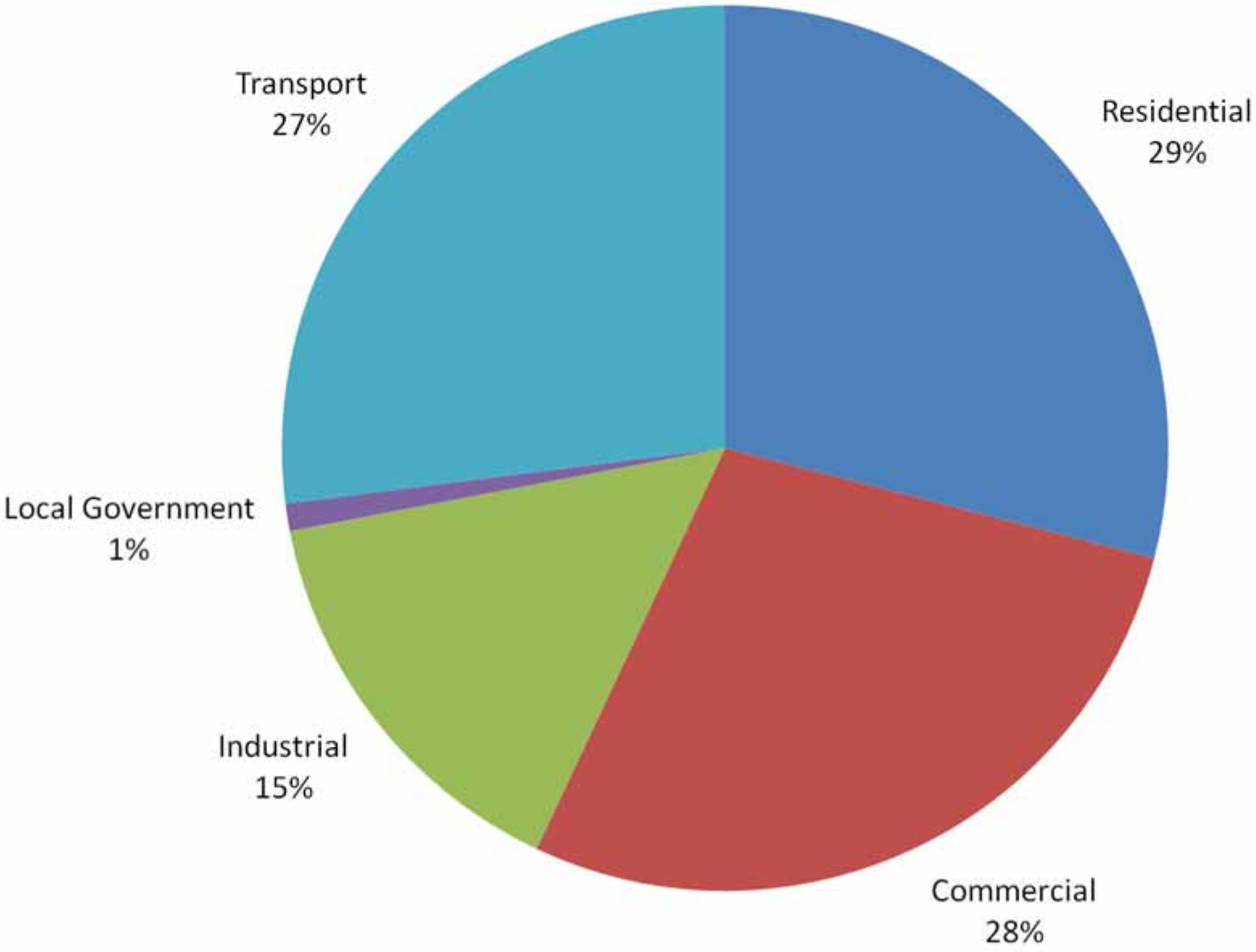
# Energy Consumption per sector in Cape Town, 2007

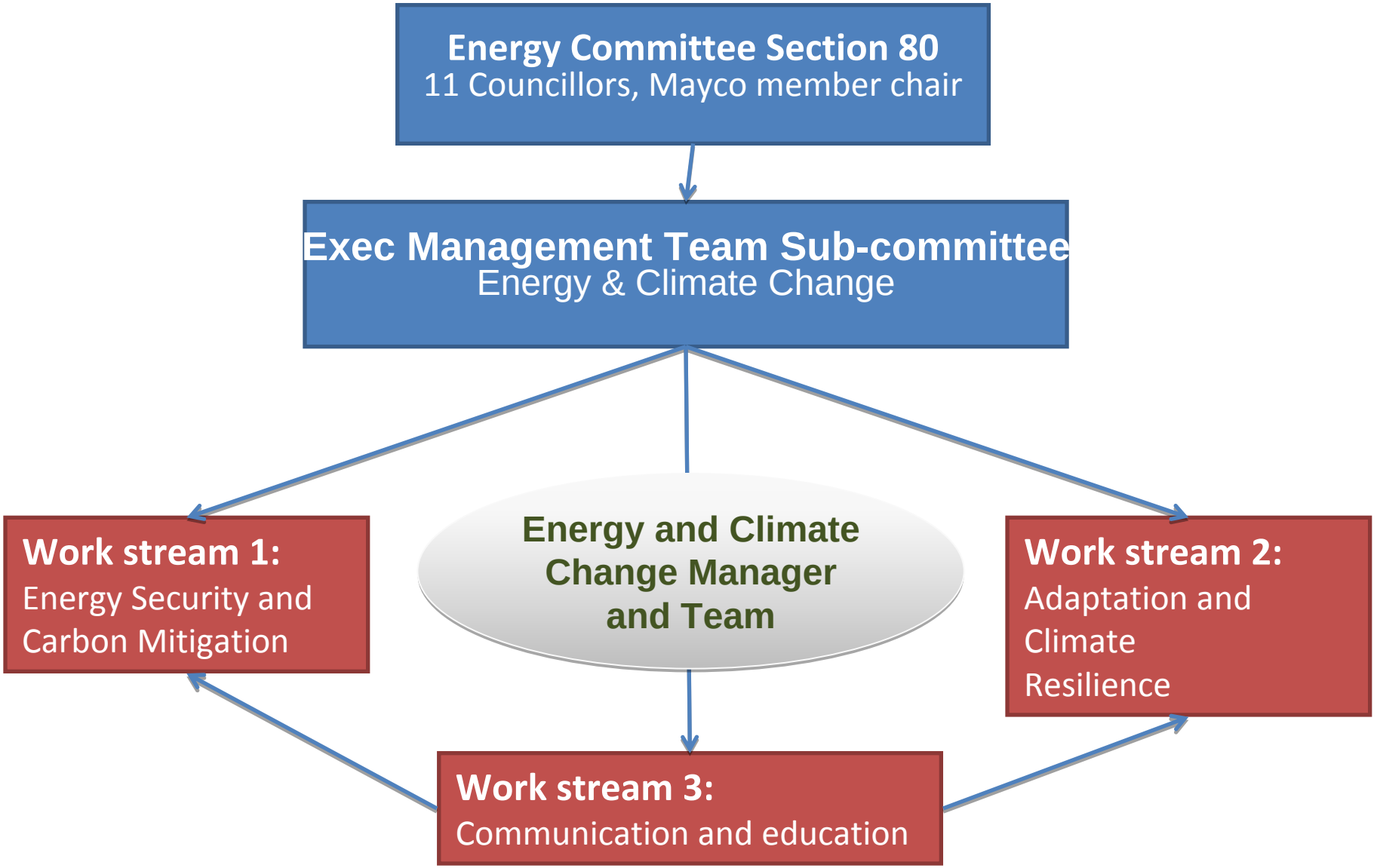



**Energy Demand by Sector in Cape Town, 2003**



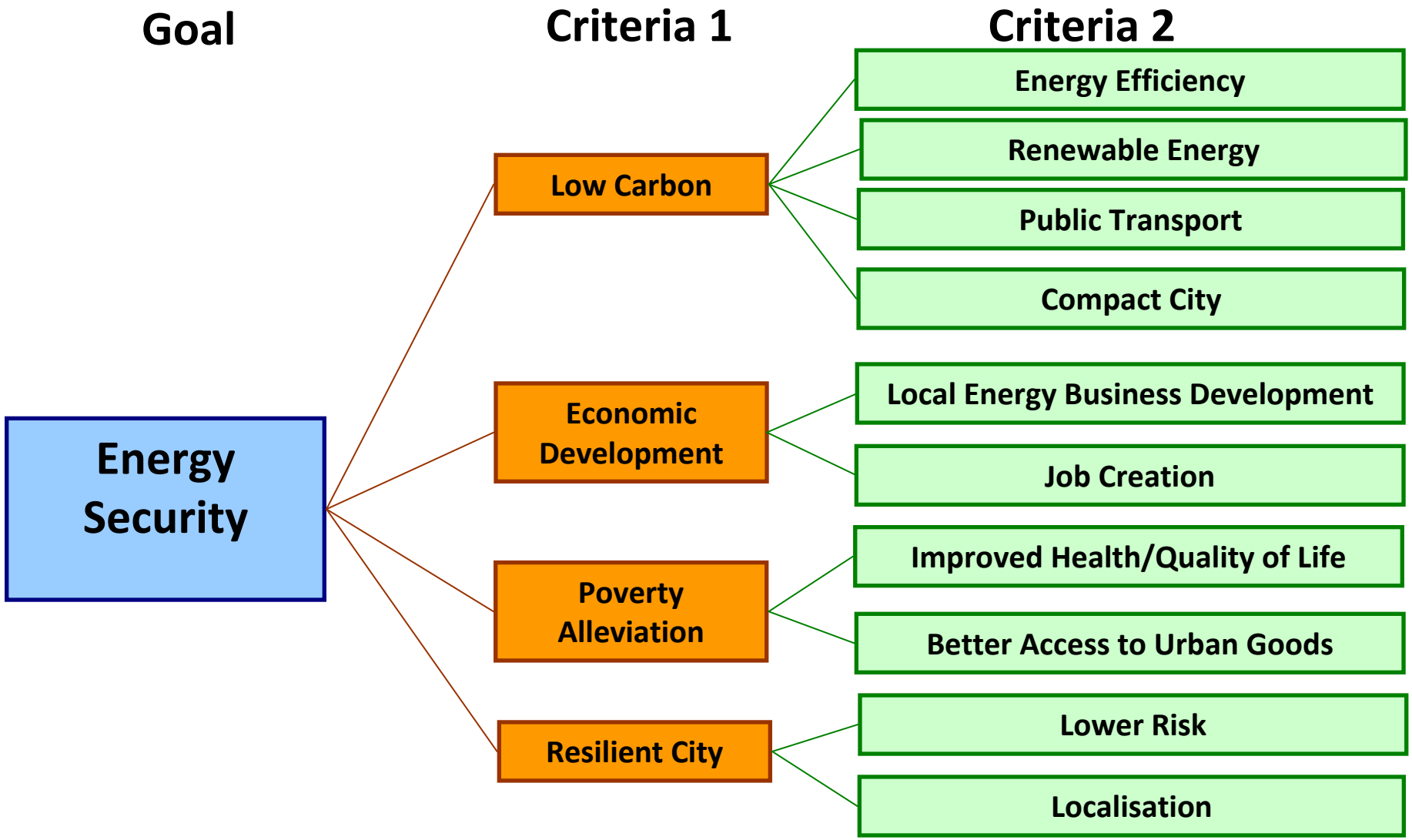
# Carbon Emissions per sector in Cape Town, 2007





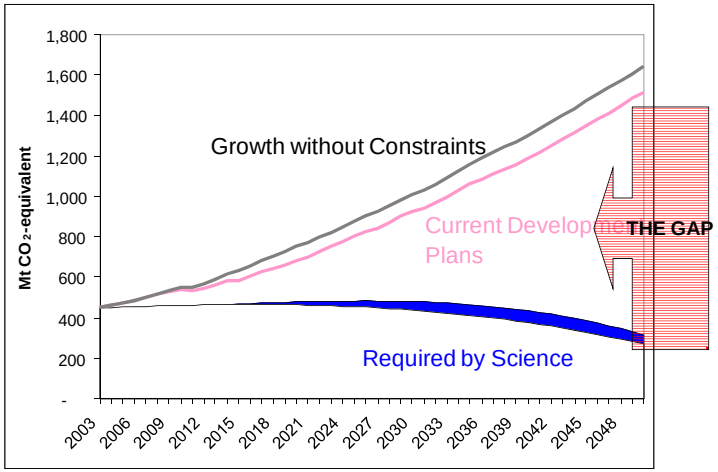

# City of Cape Town: Energy and Climate Change

# Energy Vision and Prioritisation Criteria



# Planning for Cape Town's Energy Future

- Energy and Climate Action Plan (ECAP) (May 2010)
  - 11 key objectives (130+ projects across the city)
  - All projects planned or underway till 2012
- Energy Scenarios for Cape Town Project – prioritise projects, extend projects and look into the future
- Uses similar approach to the National LTMS project



# Objectives of Energy Scenarios for Cape Town

To clarify an optimum way forward for the energy sector in Cape Town such that:

- City's **economy is robust** in a carbon constrained future
- energy **costs** for the city into the future are optimised
- energy **service provision** is not compromised
- **employment** creation is maximised
- opportunities for the development of **energy related industries** is maximised
- City's **carbon profile** is in line with national and international obligations

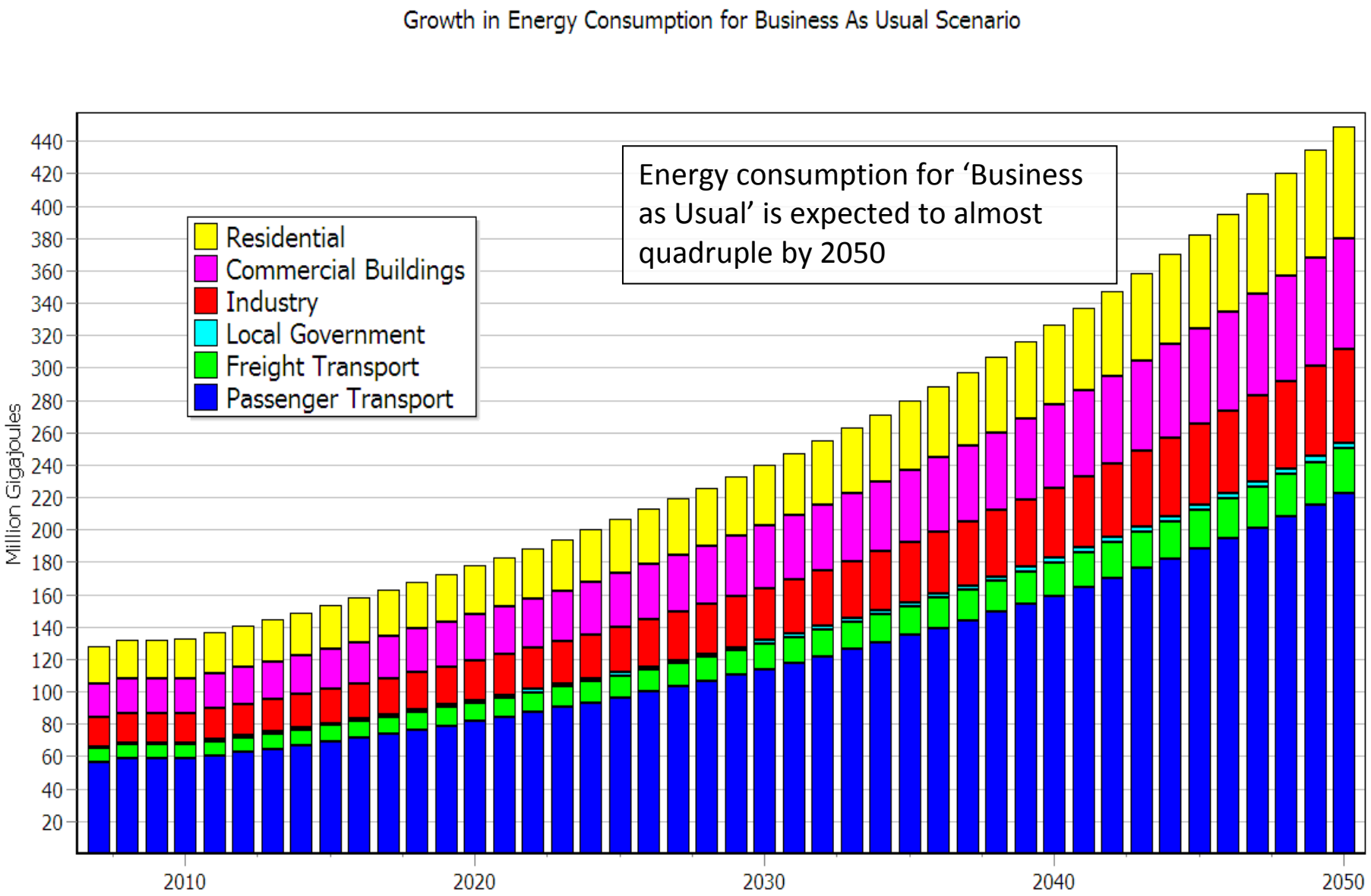
# Energy Efficiency Interventions –

- Commercial Sector
  - Efficient HVAC
  - Efficient Water Heating
  - Efficient Lighting
- Residential Sector
  - Efficient Lighting
  - Efficient Water Heating
  - Space Heating Efficiencies
- Local Government
  - Efficient street and traffic lights
  - Building efficiencies
  - Transport efficiency
- Industrial Sector
  - Efficient Lighting
  - Efficient Motors
  - Fuel Switching
- Transport
  - Fuel Switching (liquid to electricity)
  - Modal Shifts
  - Travel Demand Management

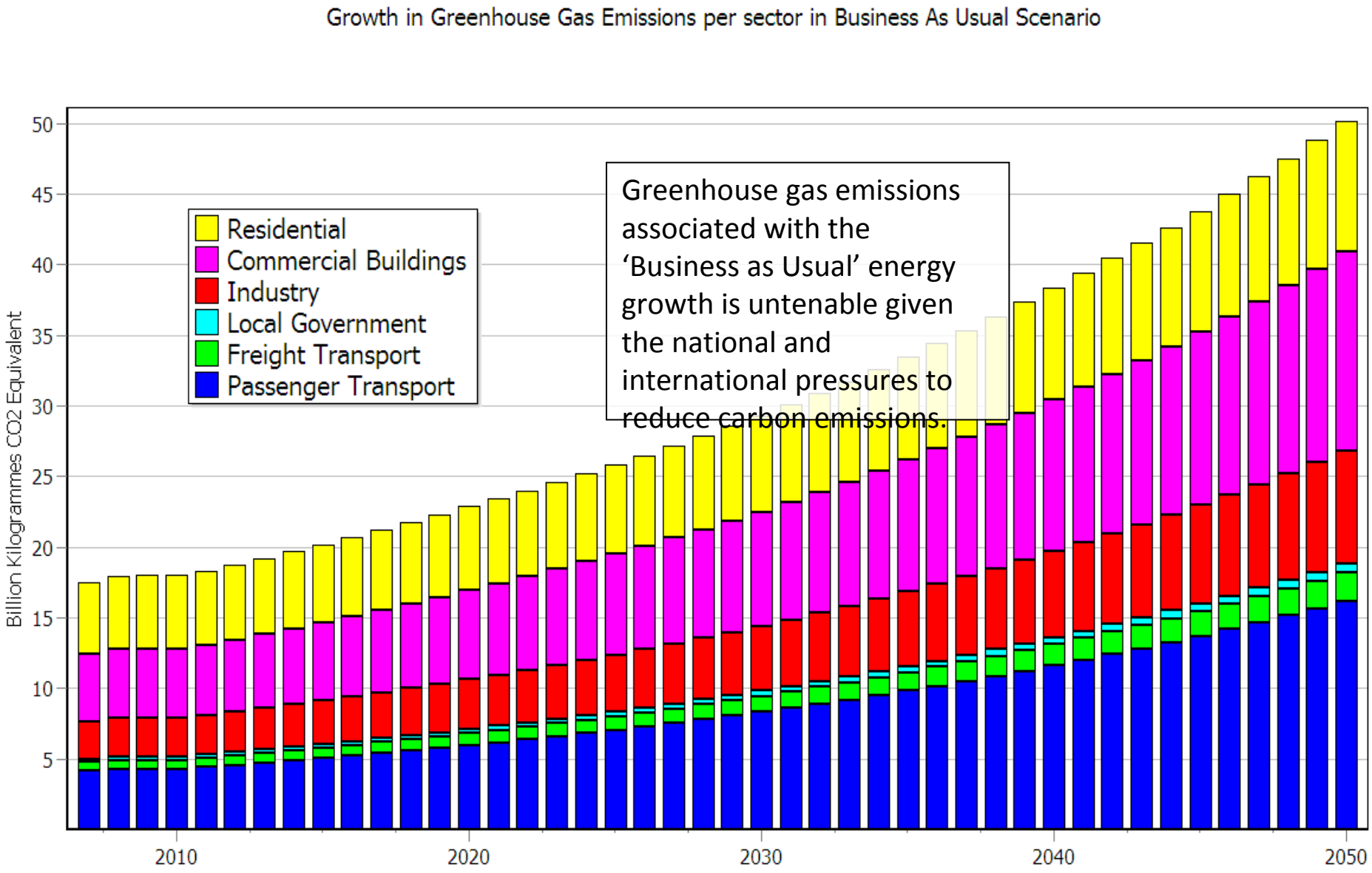
# Energy Supply Interventions

- Increase in renewable energy uptake
  - (wind, solar)
- New nuclear energy (National LTMS)
- New coal generation
- Waste to Energy – landfill gas generation
- Carbon tax implications

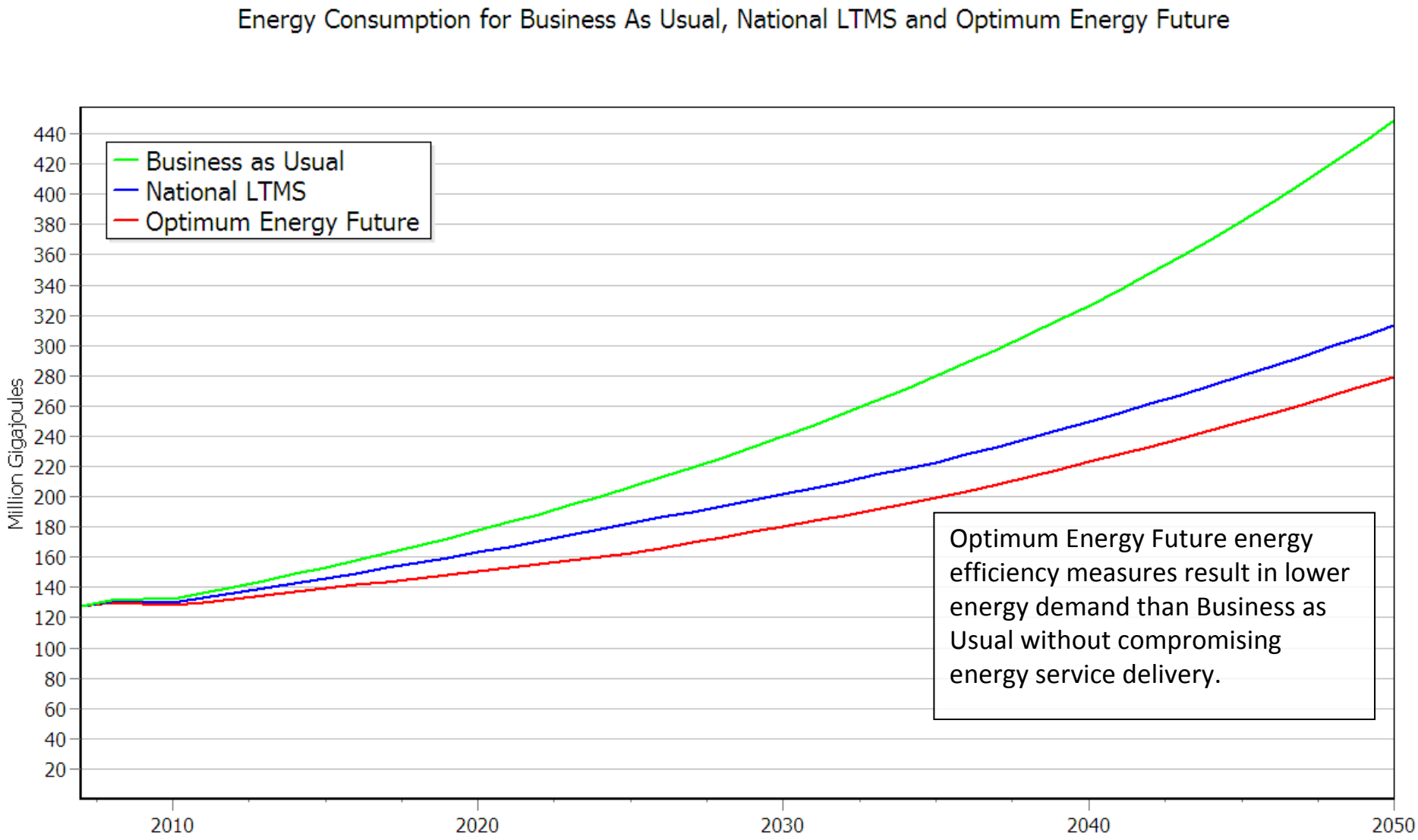
# Energy Growth into the Future: BAU



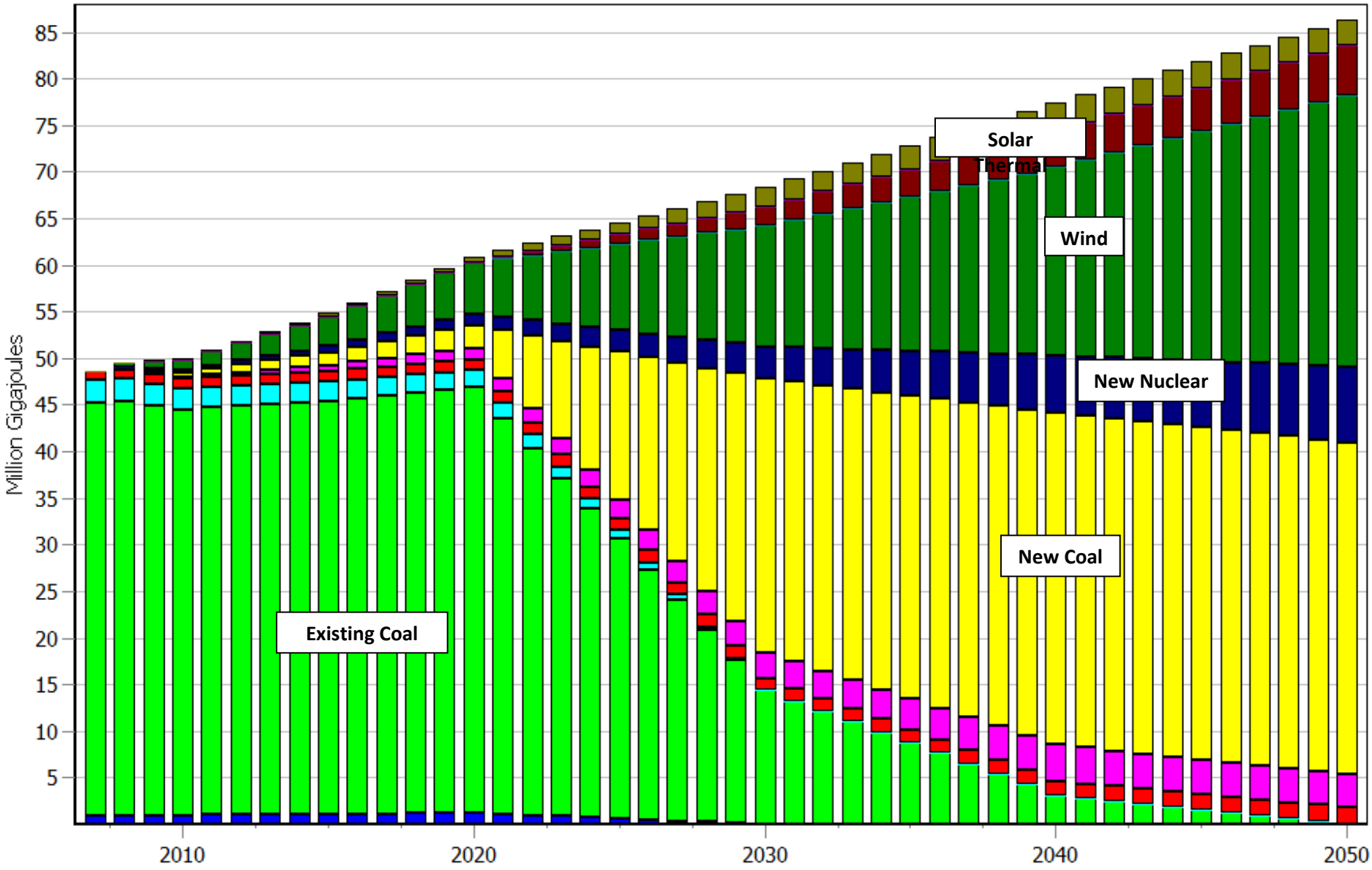
# Greenhouse Gas Emissions into the Future



# Energy Consumption for Different Scenarios



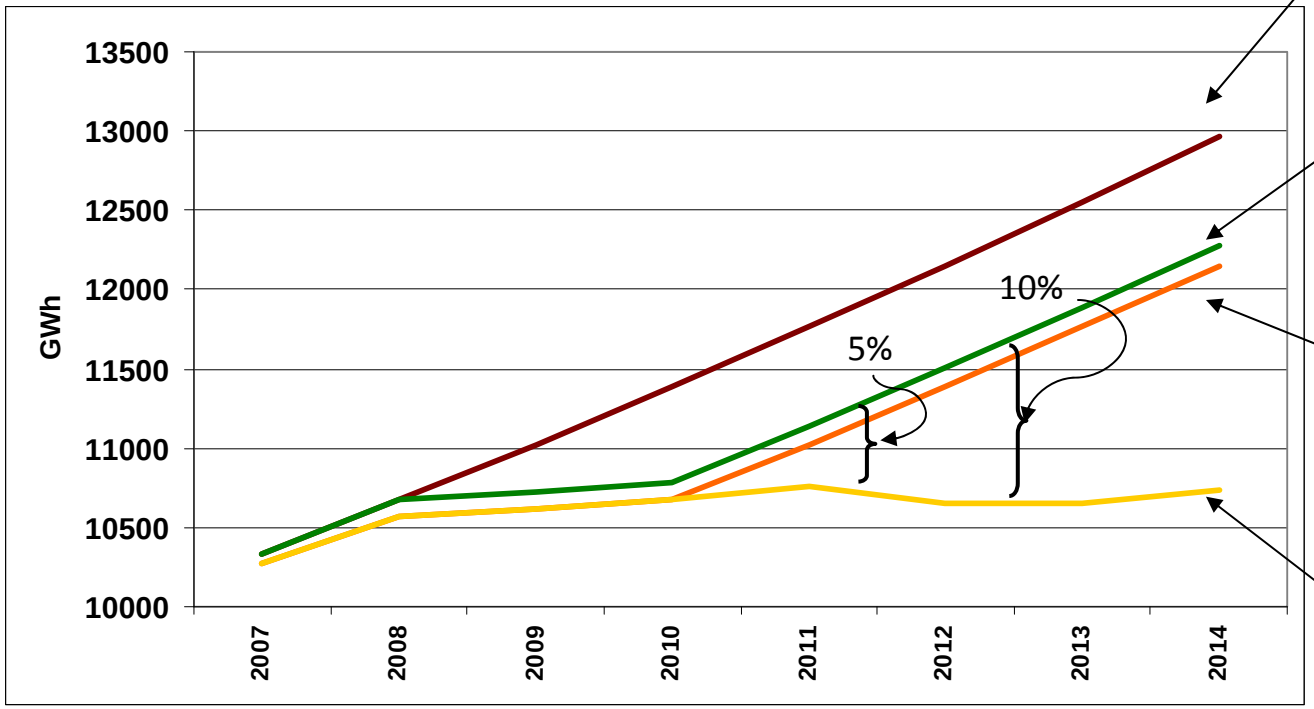
# OPTIMUM ENERGY FUTURE ELECTRICITY SUPPLY MIX



# Energy & Climate Action Plan: Objectives

| | |
|---|---|
| **Objective 1** | **City-Wide 10% Reduction in Electricity Consumption on Unconstrained Growth by 2012 (3.3%/annum 2010-2012)** |
| **Objective 2** | 10% Renewable and Cleaner Energy Supply by 2020; all growth in electricity demand to be met by cleaner/renewable supply |
| **Objective 3** | Council Operations: 10% Reduction in Energy Consumption on Unconstrained Growth by 2012 (3.3%/Annum 2010-2012); all growth in demand to be met by cleaner / renewable supply |
| **Objective 4** | Compact resource efficient city development |
| **Objective 5** | Sustainable transport system |
| **Objective 6** | Adapting to and building resilience to climate change impacts (city wide) |
| **Objective 7** | More resilient low income/vulnerable communities |
| **Objective 8** | Development of carbon sales potential of all projects |
| **Objective 9** | Local economic development in energy sector |
| **Objective 10** | Awareness: E&CC communications and education programmes (driven by Objectives 1-9) |
| **Overall** | Energy and Climate Change resources, research, development and monitoring |

## Electricity Consumption Reduction




1. Business as Usual no recession

2. BAU with recession

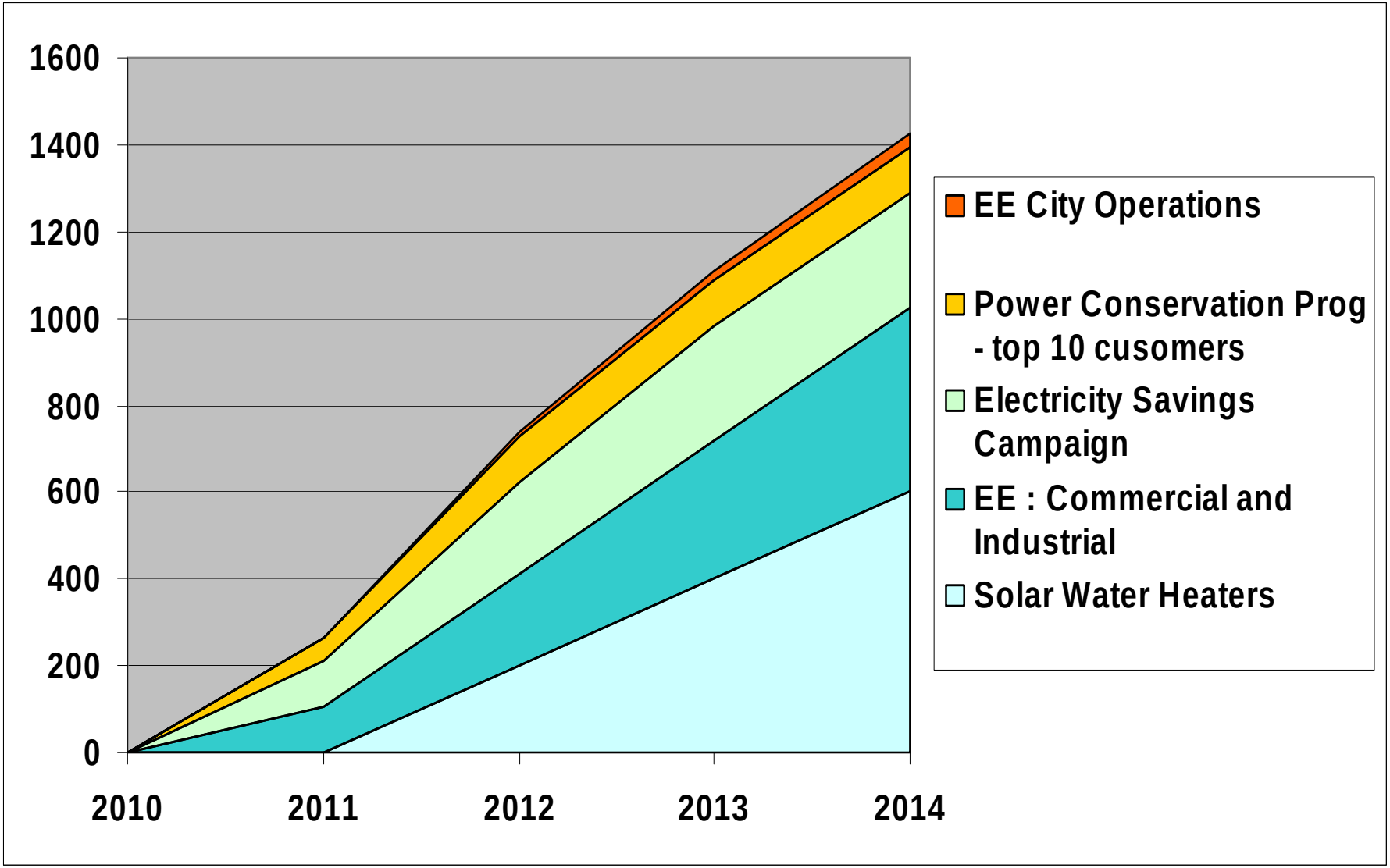
3. With efficiencies learnt from load shedding

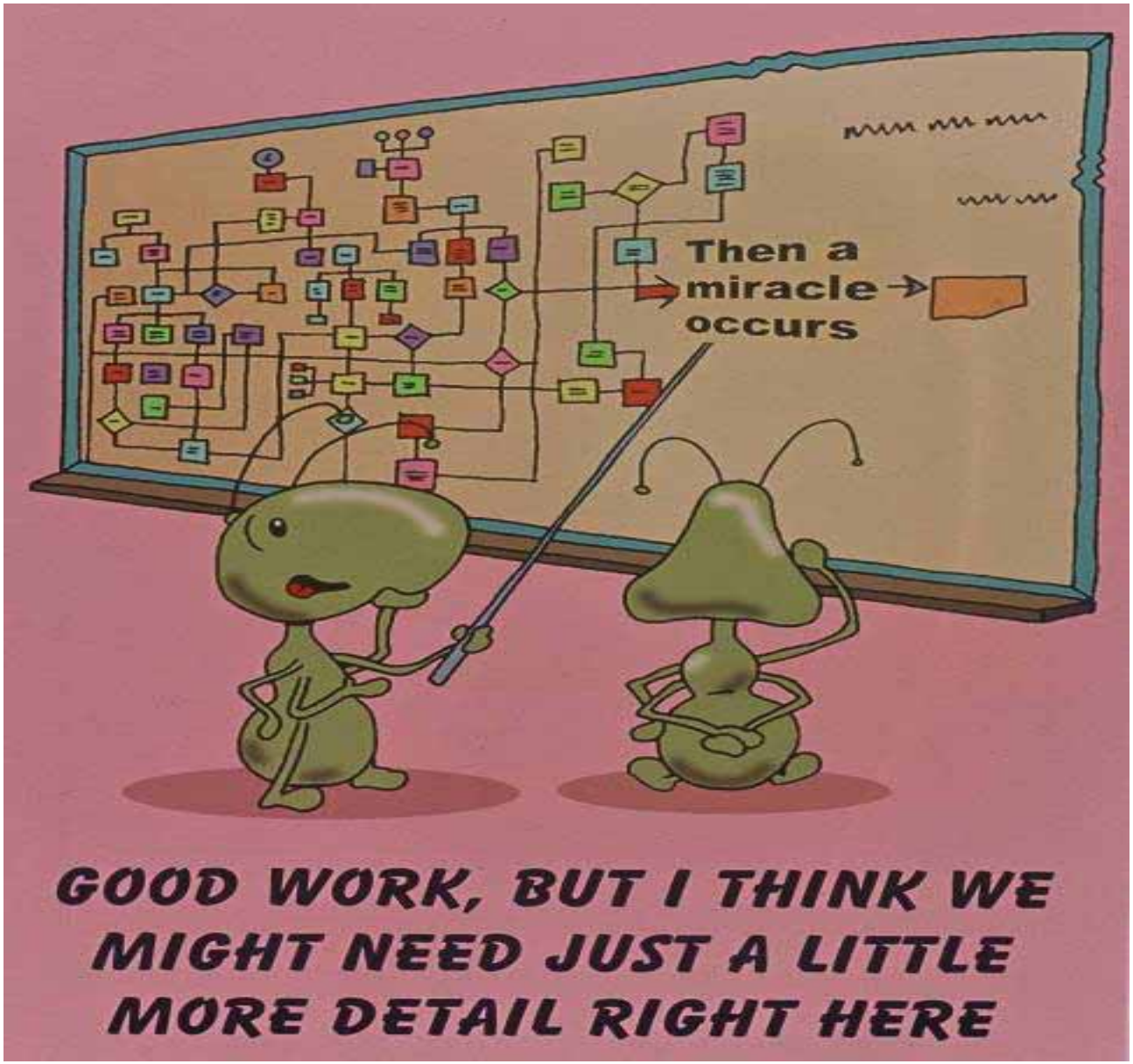
10% electricity consumption reduction to be achieved by 2012 on BAU baseline

### Savings achieved using different baselines

| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|---|
| **1** | 3.69% | 6.27% | 8.50% | 12.35% | 15.09% | 17.24% |
| **2** | 1.02% | 0.98% | 3.34% | 7.41% | 10.30% | 12.58% |
| **3** | 0.00% | 0.00% | 2.38% | 6.49% | 9.41% | 11.71% |

# Electricity Consumption Reduction Projects




Then a
miracle
occurs
GOOD WORK, BUT I THINK WE
MIGHT NEED JUST A LITTLE
MORE DETAIL RIGHT HERE

Thank you

CCTC
CAPE CLOTHING AND TEXTILE CLUSTER

# Energy Workshop

**Date:** 15 September 2010
**Time:** 12h30 – 15h00
**Venue:** Eskom, Edgemead (Directions will be sent to attendees)
**RSVP: 10th September 2010**
**Audience:** Firm-level energy champion

Join us on the **15th September** for the information briefing of the energy audits the CCTC has conducted. This initiative is being done in collaboration with **Eskom.** Please fill in and return the email reply form by no later than the 10th of September 2010 via fax 021 552 6702 or email to cctc@bmanalysts.com.

Agenda:

| | |
|---|---|
| 12h15 | Coffee and Tea on Arrival |
| 12h30 | Welcome |
| 12h35 | Audit findings (by Michele Arde) |
| 13h05 | Saving energy *(by Sidney Kuter)* |
| 13h30 | Break |
| 13h50 | Process Optimisation (Dennis Farge of Denco Automated*)* |
| 14h20 | Questions and Answers |

Should you have any queries with regards to this workshop, please contact Michele Arde at michele@bmanalysts.com.