

MUNICIPAL ENERGY MANAGEMENT

the global and national context

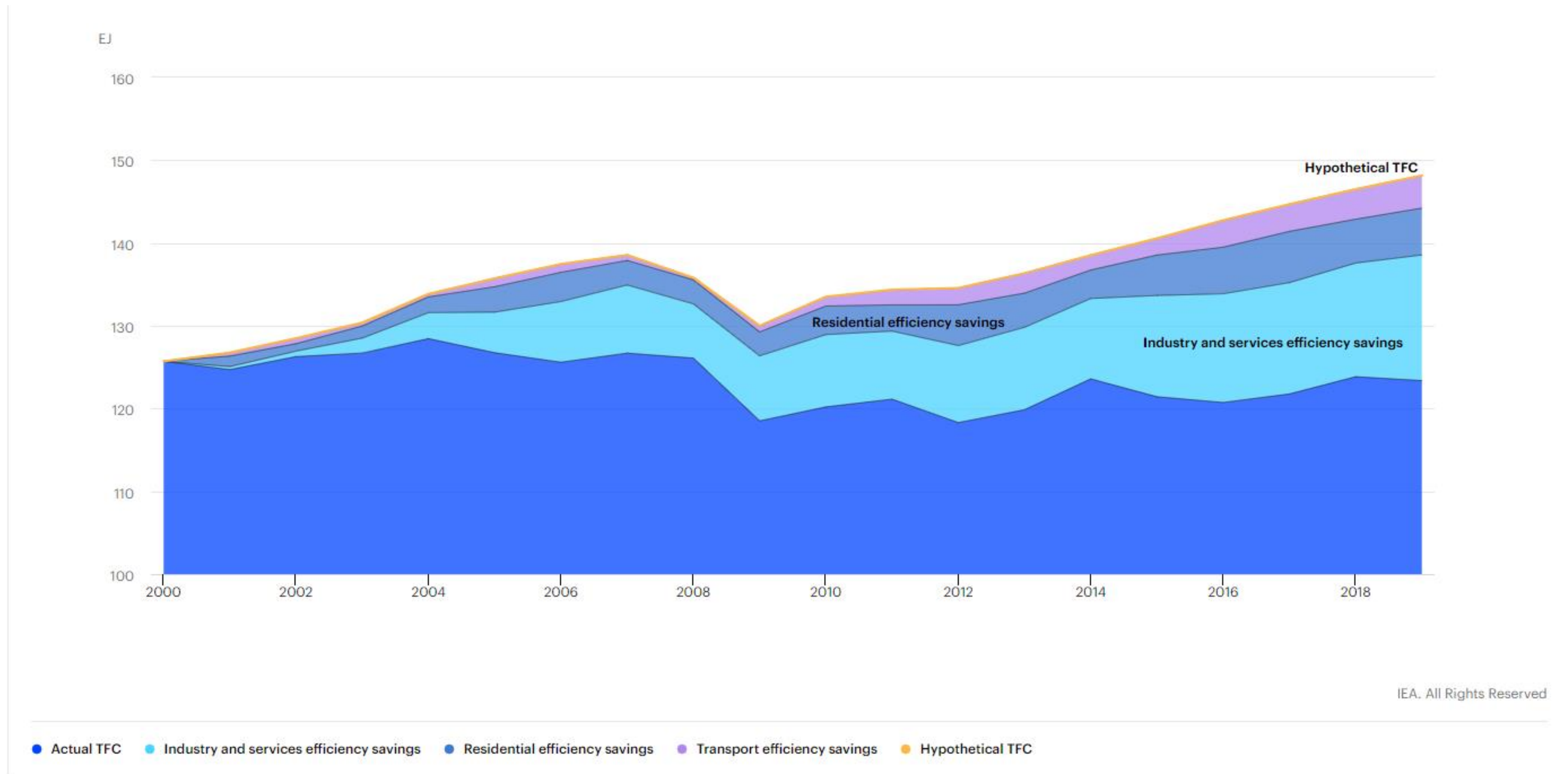


Why Energy Management?

“energy efficiency and **demand side action** have a particularly important role to play now as **global energy prices are high and volatile**, hurting households, industries and entire economies” – IEA



Cross-sectoral energy efficiency trends worldwide 2015-2020



Source: IEA 2021

<https://www.iea.org/reports/energy-efficiency-indicators-overview/cross-sectoral-energy-efficiency-trends#abstract>

City total energy savings per year

Municipality	Intervention	Annual savings (kWh/year)
Cape Town	Streetlights: 863 LED Traffic lights: 100% LED retrofitted Building retrofits: 5 facilities	130 000 695 000
Cape Town (own funding)	Streetlights: 4718 LED Building retrofits: 8 facilities	710 706 870 000
eThekweni	Streetlights: 1674 105W LED Buildings: replaced by 2594 CFL/LED/T5 bulbs, Variable speed drives: 6 standard motors replaced	1 368 446 287 679 260 875
Nelson Mandela Bay Municipality	LED traffic lights: 14 000 75/55W bulbs replaced by 11/10W LEDs, High mast lights: 1000W replaced by 400W LEDs, Buildings: lights replaced and sensor installed.	2 228 760 17 630 000 2 228 760
George	LED streetlights LED high mast lights	434 934 (predicted) 109 745 (predicted)
Mbombela	High mast lights and streetlight retrofit	1 010 904

Emerging global energy management trends



1. Digitization

- Intelligent data collection, analysis methods
- Digital transformation to link energy data and operational data for best outcomes on energy consumption

2. Favourable Policies

- Improved policy making supporting energy management operationalization
- Linking local goals with global emissions and energy supply vs demand trends

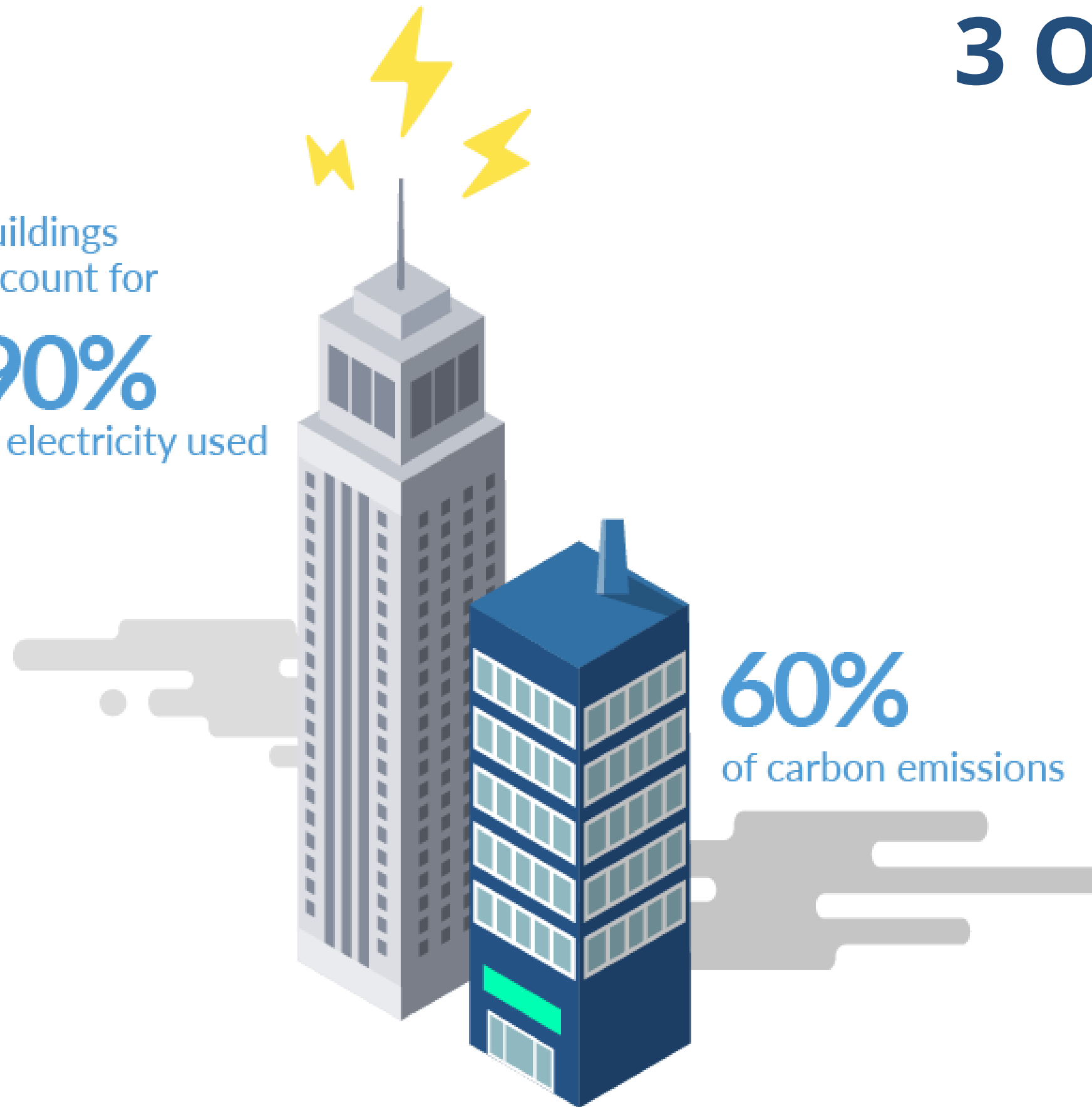
3. Smart meters and smart grids

- Smart meters improve efficiency and enable better energy auditing
- Smart facilities management (using artificial intelligence systems to provide real time energy use patterns, balance consumption and demand, improve management systems)



3 Objectives for MEMS

Buildings
account for
90%
of electricity used



60%
of carbon emissions

1. Use = availability

Improving energy efficiency and reducing energy use, thereby reducing costs

2. Using data to manage energy

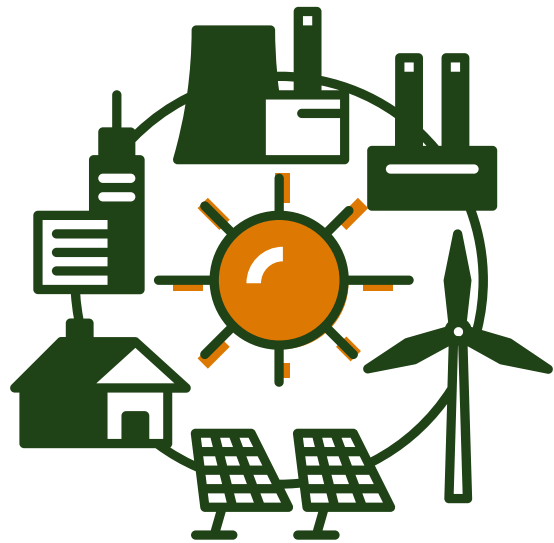
Using consumption data to achieve optimal energy use, developing and maintaining effective monitoring, reporting and management strategy for wise energy usage

3. Emissions Reduction

Implementing energy management to reduce consumption from emissions-based sources



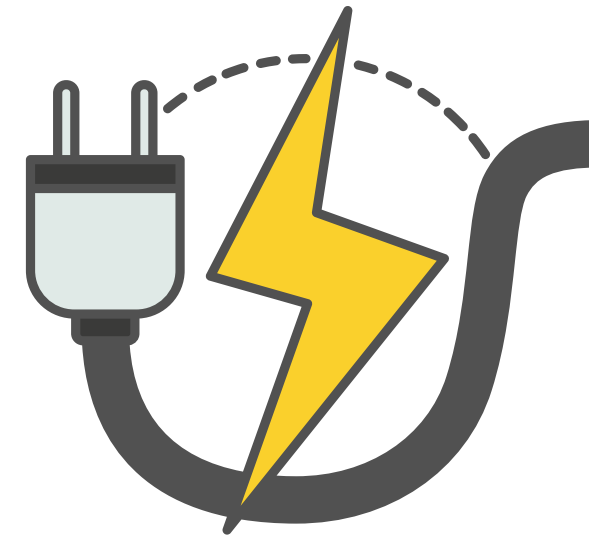
Key Drivers for Energy Management in Municipalities



**Optimizing
renewable energy
resources**



**Decreasing carbon
footprint and GHG
emissions**



**Managing energy
demand and
consumption**



**Reducing energy
costs**



Why and how to Action Energy Management in Municipalities



Driver	Optimizing renewable energy resources	Decreasing carbon footprint and GHG emissions	Managing energy demand and consumption	Reducing energy costs
Link to municipal plans	Energy Master planning	Climate action plans/ Climate change strategies	Energy Efficiency Strategy	Cost of Supply studies
Link to municipal implementation	Embedded generation uptake - to optimize NetZero carbon buildings	Focus on high emitting sectors i.e. transport, buildings,	MEMS policy , EEDSM	Reduced energy bill (internally) Reduced bulk energy supply
Partner Sectors/ directorates	Electricity and Energy Facilities management	Environmental management, Urban Planning (Spatial and IDP) roads and transport	Facilities management WWTP,	Electricity, Facilities, Buildings, finance



THANK YOU

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