CITY OF CAPE TOWN
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City of Cape Town New Urban Agenda

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Sustainable Energy Markets
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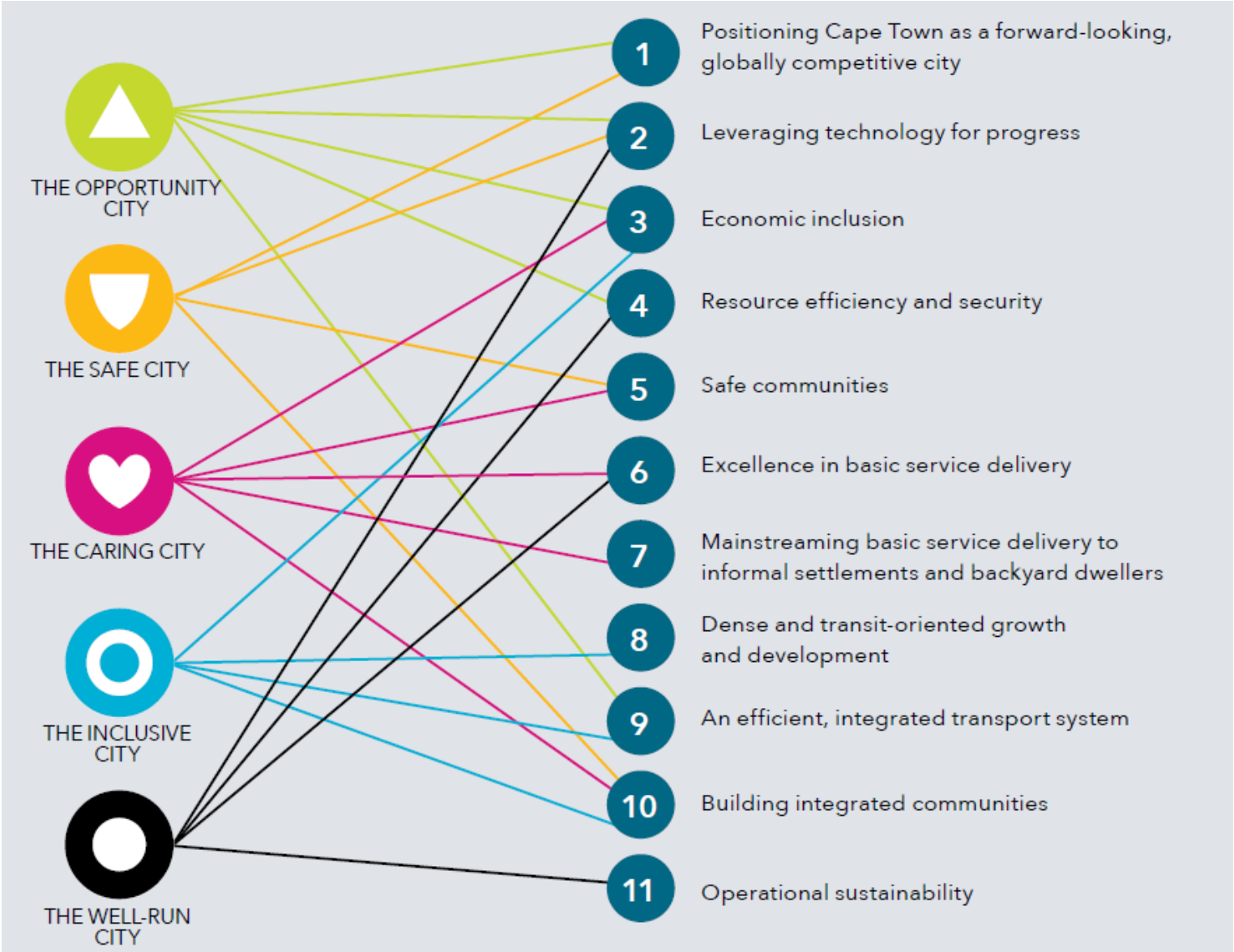
Making progress possible. Together.

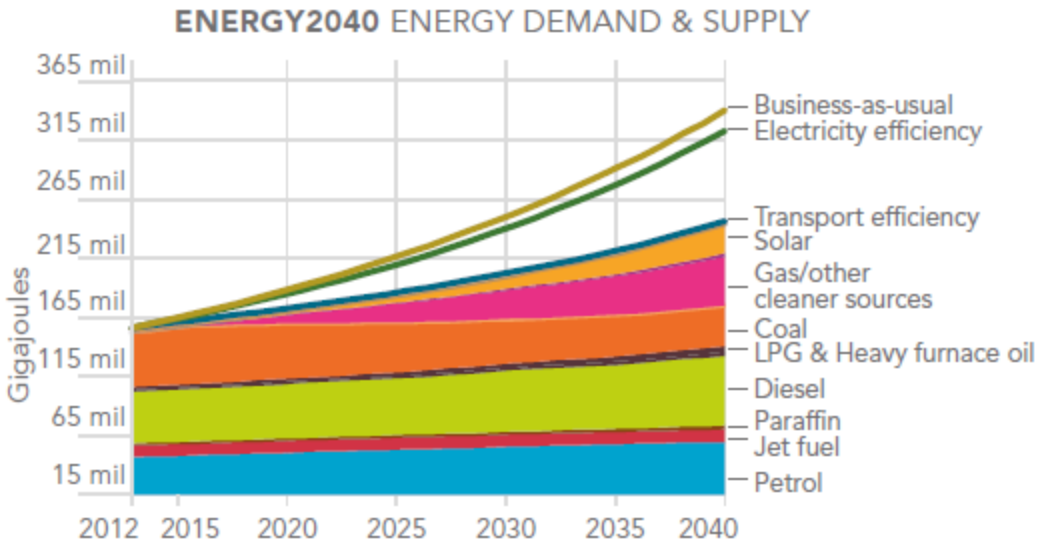
Presentation Outline

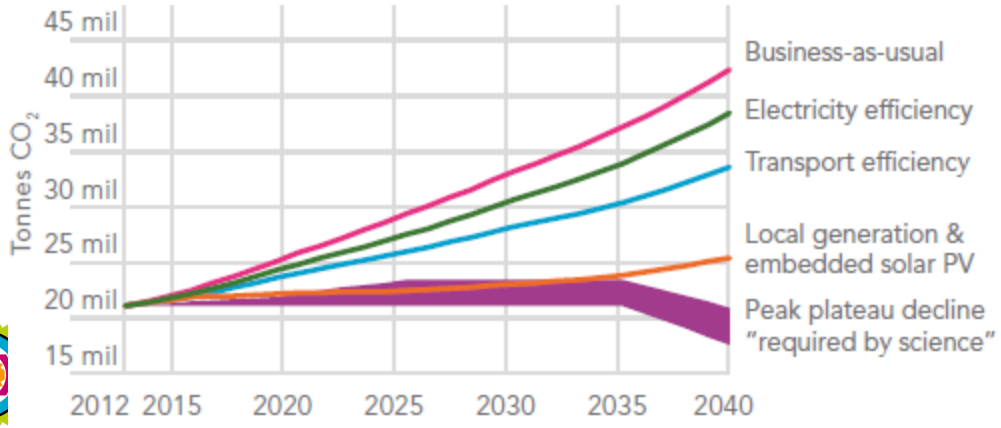
- Integrated Development Plan
- Cape Town Energy 2040 Vision
- Energy in Electricity
- Energy in Transport
- Challenges faced

Integrated Development Plan



Cape Town Energy 2040





CARBON EMISSIONS TARGETS*	2020	2030	2040
Electricity efficiency	-3,7%	-7,7%	-9,3%
Transport efficiency	-3,2%	-7,2%	-11,2%
Cleaner electricity supply	-6,2%	-13,9%	-15,9%
Total carbon reduction off business-as-usual	-13%	-29%	-37%
Tonnes of CO_2/USD million GDP	820	600	490
Tonnes of CO_2/capita	5,4	5,3	-

**The energy and carbon emissions targets are conditional on the Energy2040 modelling assumptions remaining constant.*

Energy: Electricity

- City procures power mainly from Eskom (1.8 GW of capacity mainly coal)
- Approximately 3.6% of the Eskom power procured is from Renewable Energy Resources
- Largest uptake of renewable is in Solar PV installations
  - Rising electricity prices
  - Lower PV costs
- IPP procurement process is fraught with regulatory and policy issues
  - Clarity required for large scale renewable energy procurement

Energy Efficiency

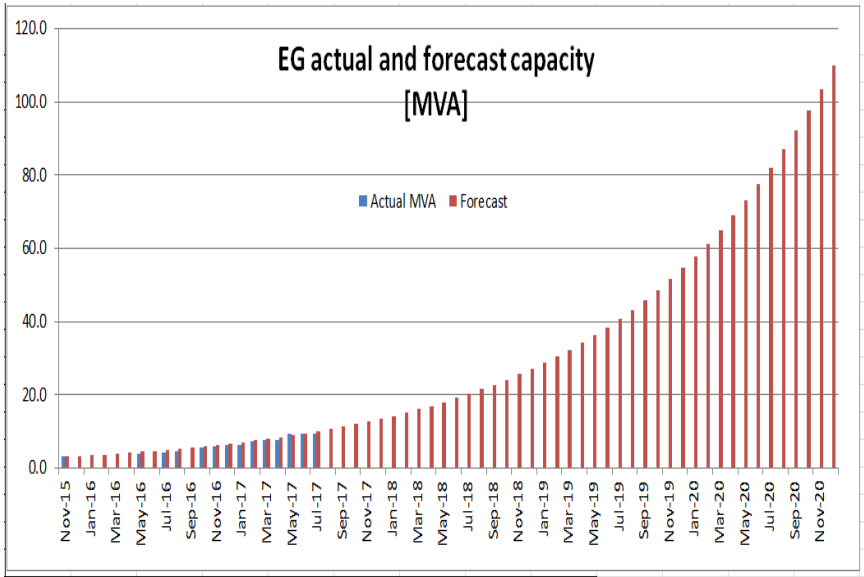
- **Energy Efficiency**
  - Energy efficiency initiatives implemented in many buildings & facilities
  - Replaced street lighting and traffic lights
  - Smart meters being installed
  - Strategy to rollout to other departments (solid waste, waste water, etc.)
  - Promotion, awareness and education in private sector
  - Rollout of Solar Water heating and heat pumps through accredited installers
  - Low Income energy services

Renewable Energy

Solar
- Independent Power Producers
- Small Scale Embedded Generation
- City Owned PV

- Hydro
  - Micro-hydro's at waste water plants

- Wind
  - Darling wind farm



This information includes the total:	Approved grid-tied installations commissioned	Approved off-grid installations	Identified illegal installations

Waste to Energy

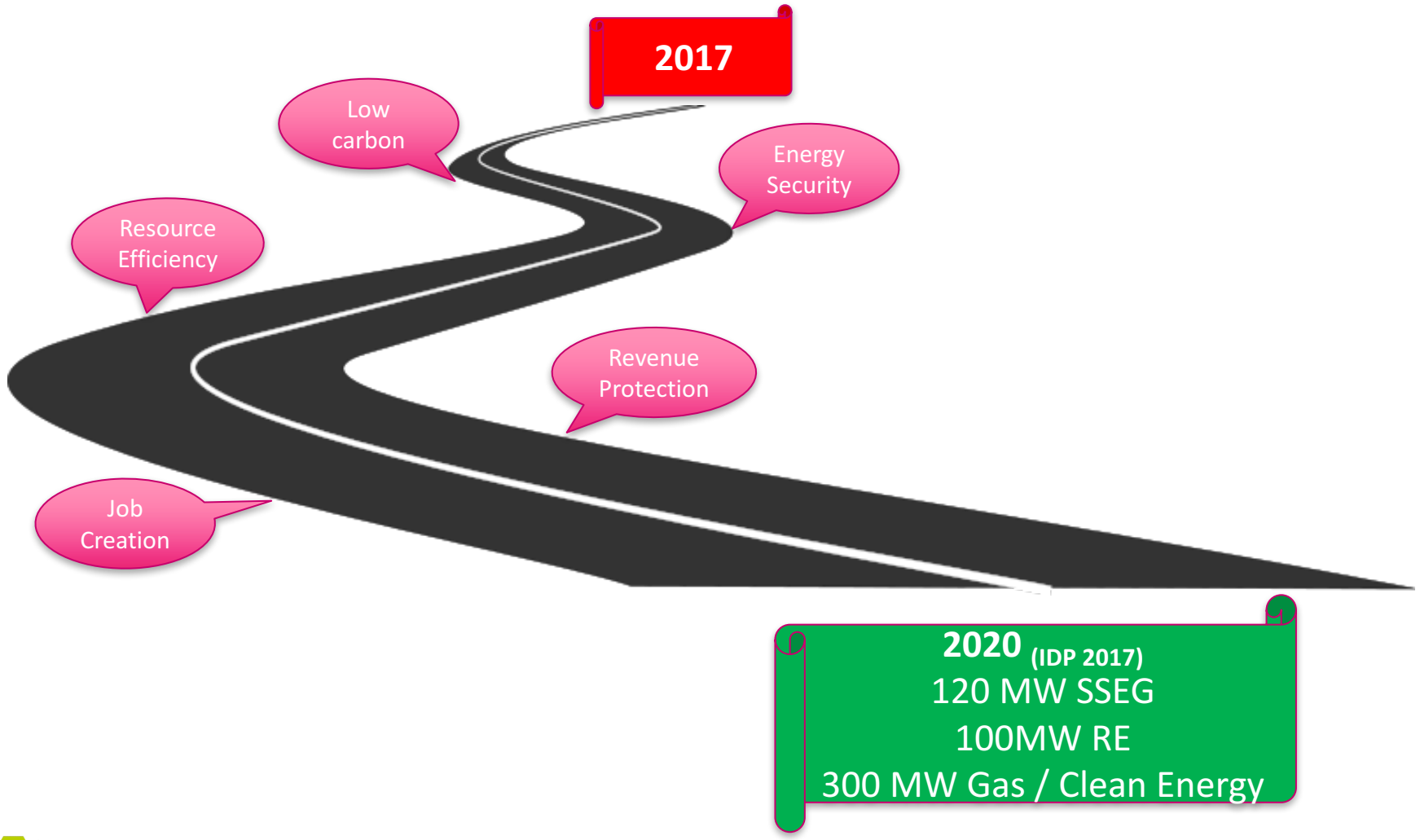
Waste Water

- Primary sludge waste is treated in bio-digesters
- Planned installation of CHP plant (1.7MW)
- Key water sites are being assessed
- Solar PV installation feasibility assessments

- Solid Waste

Rehabilitation of Atlantis, Vissershok, Waterkloof and Witsand landfill sites	Ongoing
Landfill gas infrastructure for flaring[4] at Coastal Park landfill	Commencing in 2017
Landfill gas infrastructure for flaring at Bellville landfill	Commencing in 2017
Landfill gas infrastructure for flaring at Vissershok landfill	Commencing in 2020
Design and development of materials recovery facility: Helderberg	Commencing in 2017
Design and development of integrated waste management facility in Helderberg	From 2018 to 2020

Energy 2040



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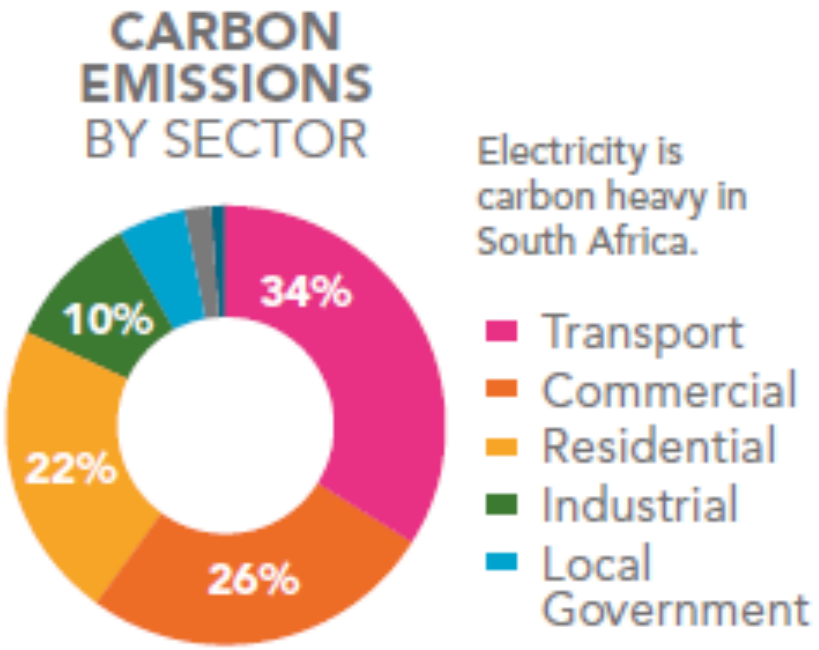
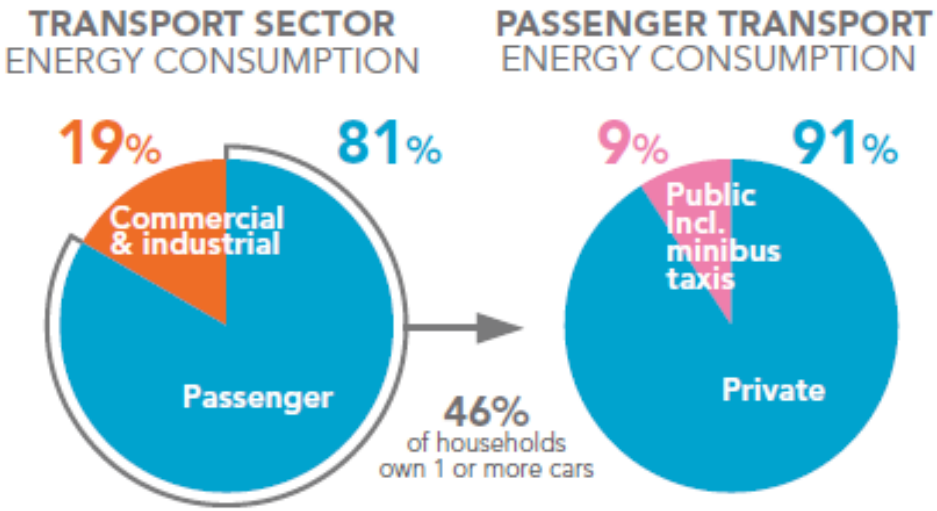
Approach to achieving target

Roles	Business Model	Modalities
Building Generation Capacity	Building embedded power systems (e.g. installing rooftop solar PV systems on municipal buildings with or without feeding into the municipal grid)	Financing through the municipality's balance sheet Financing through debt Financing through grants
	Building stand-alone power plants (e.g. building solar park on municipal land used for municipal grid or own use)	Financing through debt/grants Entering into a public-private partnership (PPP) Sign a Build-Operate-(Own)-Transfer agreement Set up a special purpose vehicle with other municipalities / partners
Procuring Energy	Procuring electricity from embedded generators (e.g. procuring electricity from rooftop PV systems installed by residential customers)	Purchase based on feed-in tariff / net metering / net billing
	Procuring electricity from an independent power producer (e.g. procuring electricity from an independent solar park)	Purchase based on a power purchase agreement (PPA)
Facilitation Role	Playing a trading/aggregating role (e.g. buying electricity from local producers for on-selling to willing customers at a premium)	Billing through the electricity tariff (with potential premium)

Energy: Transport





Reducing the transport footprint

- Transit Orientated development
  - Strategy in place
  - Extend coverage of public transport
  - New economic development zones

- E-Mobility
  - Development of EV framework
  - Include EV's in fleet
  - Work on developing infrastructure
  - Electric bus fleet rollout in 2018 (PV for charging)

  - Improve bicycle lanes
  - Electric bikes, scooters

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Challenges faced by City of Cape Town

- Drought crisis
- Regulatory challenges
- Internal resources
- Revenue risk
- Technical risks
- Socio-economic development

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Thank You

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