• Four South African cities – Cape Town, Johannesburg, Tshwane and eThekwini – have made a bold commitment:

**Carbon neutral new buildings by 2030**

**Cape Town carbon neutral by 2050.**

• Both programmes, under the C40 Deadline 2020 commitment, were launched in 2018

Paris Agreement goals require unprecedented collaboration and urgent action.
Why climate action?
While the debate about the veracity of climate change is (mostly) over, there is still much resistance to change because of the way we frame “climate action”. Low-carbon is a necessity but it is also an opportunity.
WHY CITIES CAN BE THE SOLUTION TO CLIMATE CHANGE.

City mayors are directly accountable to their constituents for their decisions, and are more nimble than state and national elected officials to take decisive action—often with immediate and impactful results. What our cities do individually and in unison to address climate change can set the agenda for communities and governments everywhere.
How is the City of Cape Town tackling climate change?
Carbon Neutrality by 2050

Only three years to save 1.5C climate target, says UNEP
12 key opportunities could deliver 90-100% of necessary emission reductions
Shifting gears: from Energy2040 to Carbon Neutral 2050

Deadline 2020 Climate Action Planning in Africa programme

Extended planning horizon

Going carbon neutral by 2050

Additional / enhanced measures
Envisioning a Carbon Neutral Cape Town
What does Carbon Neutral 2050 mean?

- **By 2050**: All of the activities that take place within our city (including all those activities that take place in our city which result in emissions elsewhere) result in zero carbon and other greenhouse gas emissions.

**What needs to be done?**

- Power our city with renewable energy
- Ensure all buildings (homes and businesses) are highly energy efficient
- Reduce our need to commute and to travel, and do so without using fossil fuels (petrol and diesel); public transport prioritised
- Produce as little waste as possible, and re-use any waste produced

*Source: Deadline 2020 – Focused Acceleration Report*

**Note: system boundary considerations - pro's and cons of adopting a city-wide focus**
Stakeholder support and commitment

- The City cannot tackle climate change, and in particular carbon neutrality on its own. We will need to create the right conditions and an enabling environment for others to come to the party, be they local businesses, citizens, civil society groups, NGO’s, academia, sector development agencies and provincial and national government.
Mainstreaming Carbon Neutral 2050 example: across CCT’s spatial, land use and transport planning

Spatial planning
- Spatial Development Framework (SDF)
- Growth management plan
- Spatial development criteria
- Dev conditions
- CN Building bylaw

Land use planning
- Dev criteria
- Dev conditions
- CN Building bylaw

Catalytic sites
- Criteria for development
- Incentives/regs?
- Intensification / diversification
- What use mix?

Transport planning & operations
- Transit-oriented development (TOD) criteria
- Public transport
- High occupancy vehicle lanes (HOVLs)
- Electric vehicles
- Increased car occupancy
- ...

CN strategy and objectives to be embedded in:
- Integrated Development Plan (IDP)
- SDBIPs
- Strategic Management Framework (SMF)
- Key Performance Areas (KPAs)
- Built Environment Performance Plan (BEPP)
- Council reports
- DAMS (Development Application Management System)
- Project Portfolio Management (PPM)

What /Who enables?
- Technical assistance
  - Sustainable Energy Africa
  - GreenCape
  - CSIR
  - UCT Centre for Transport Studies
- Climate finance and green bonds
- Business
  - SAPOA, ACT, Chamber
  - WCDF, EWWForum
- NGOs
  - Open Streets, BEN
  - DAG, ...

Measuring – what and how?
- Carbon targets
- Fuel consumption
- Carbon metrics
- Carbon comparisons
- Average passenger kilometers/car / public transport
Cape Town carbon neutrality - Partnerships

> 80 cities around the world
Bending the Emissions Trajectory
(Sector-based) emissions & current trend

Carbon emissions by sector (including waste), Cape Town, 2012-2016*

* Excluding aviation, international marine

<table>
<thead>
<tr>
<th>Year</th>
<th>tCO$_2$e (millions)</th>
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<tbody>
<tr>
<td>2012</td>
<td>22 344 026</td>
</tr>
<tr>
<td>2015</td>
<td>21 233 880</td>
</tr>
<tr>
<td>2016</td>
<td>22 525 514</td>
</tr>
</tbody>
</table>

**tCO$_2$e / year**
Energy & Emissions Data (2012)
What about consumption-based emissions?

**Consumption = Production - Exports + Imports**

Emissions (tonnes) in Cape Town (2011):

Sector-based (GPC) emissions = 6 tCO$_2$ / capita

Consumption-based emissions (COICOP) = 7.8 tCO$_2$ / capita

Major contributors to this footprint are in the table alongside.

<table>
<thead>
<tr>
<th>Description</th>
<th>tCO$_2$e / capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bovine and other meat products</td>
<td>0.47</td>
</tr>
<tr>
<td>Chemicals, rubber, plastics and machinery</td>
<td>0.65</td>
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<tr>
<td>Electricity</td>
<td>1.11</td>
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<tr>
<td>Construction</td>
<td>0.45</td>
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<tr>
<td>Transport</td>
<td>0.89</td>
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<tr>
<td>Public Admin, Defense, Education, Health</td>
<td>0.95</td>
</tr>
<tr>
<td>Everything else</td>
<td>3.28</td>
</tr>
</tbody>
</table>

**TOTAL** 7.8

Source: C40 Cities Climate Leadership Group

COICOP: Classification of Individual Consumption According to Purpose

GPC: Global Protocol for Community-Scale Greenhouse Gas Emissions
Total consumption-based GHG emission account for Cape Town

![Graph showing GHG emissions by category.]

- Food and non alcoholic beverages: 13%
- Alcoholic beverages and tobacco: 0%
- Clothing and footwear: 16%
- Housing, water, electricity, gas and other fuels: 1%
- Furnishings, household equipment and routine household maintenance: 3%
- Health: 2% (0%)
- Transport: 23%
- Communication: 1%
- Recreation and culture: 4%
- Education: 1%
- Restaurants and hotels: 1%
- Miscellaneous goods and services: 1%
- Government: 1%
- Capital: 1%
- Other: 1%

Total GHG emissions: 29,159,480 tCO2e
Intended trajectory (current commitments & programmes)
What initiatives are already underway?
Project examples
Decarbonising the grid: Large scale renewable energy

CITY OF CAPE TOWN

26 FEBRUARY 2019

STATEMENT BY THE CITY’S MAYORAL COMMITTEE MEMBER FOR ENERGY AND CLIMATE CHANGE, COUNCILLOR PHINDILE MAXITI

City to petition court to allow electricity purchases from independent producers

Summary

- The City of Cape Town has instructed its advocate to request that the North Gauteng High Court treat the pending court matter between the City, the Minister of Energy, and the National Energy Regulator of South Africa (Nersa) as urgent
- This request aims to allow the City, and other municipalities across South Africa, to purchase energy from independent power producers (IPPs)
- The City is fighting for its right to buy cleaner energy directly from IPPs
Rooftop solar and energy efficiency

SAFE AND LEGAL INSTALLATIONS OF ROOFTOP PHOTOVOLTAIC SYSTEMS
COMMERCIAL AND RESIDENTIAL - IN CAPE TOWN

- Make informed decisions about what type of PV system you are allowed to install.
- Select a service provider capable of designing, supplying, installing, and commissioning your PV system safely and legally.
- Ensure you have addressed all the key requirements before, during, and after installation.

GRID-TIED FEED IN PV SYSTEMS

1. Grid-tied feed in PV systems have PV panels that are connected directly to an inverter. The electricity generated is used locally on the property or fed back into the electricity grid, when excess electricity is generated.

City of Cape Town

CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD
Creating a shared vision – communication & awareness raising

ENERGY, WATER & WASTE FORUM
CAPE TOWN COMMERCIAL SECTOR

A proud partnership of:

Supported by:

Also supported by Accelerate Cape Town, Cape Chamber of Commerce, Cape Peninsula University of Technology, Cape Town Partnership, many City Improvement Districts, Friedrich Naumann Foundation, Green Building Council SA, GreenCape, National Business Initiative and SA Council of Shopping Centres.
Economic Benefits of the Solar Water Heater Programme:

- **46 000 SWHs installed**
- **R810m into local economy**
- **1287 job years**
- **128 000MWh electricity saved/year**
- **R274m into residents pockets/year**

Local skills development. Most jobs are in installation. Reduction in purchases from Eskom. Most will circulate in Cape Town economy.

CCT electricity saving, SWH, RE website
Resource Efficient Development Criteria
Enforcement of new National Building Regs EE provisions
Ceilings and Solar Water Heaters for low income

Mamre ceiling retrofit

Kuyasa ceilings, SWHs and hotboxes

Lwandle compact housing and SWHs
Distribution of solar lights for unelectrified homes

iShack - solar home systems

Wonderbags
Metropolitan Spatial Development Framework:
from urban edge to inward growth and investment

2012 - 2018
Urban form and resource efficiency goals

Example of intensification and diversification of development along transit routes and nodes (TOD) - Voortrekker Corridor
Housing – well located, compact housing

N2 Joe Slovo - from shacks to houses - compact, well located, SWHs

Freedom Park – compact, well located

Green walls - Gugs
Public Transport: Buses, trains, taxis, High Occupancy Lanes - supported by non-motorised transport: bikes and walking
Waste: Recycling, Zero organic waste to landfill, waste-to-energy
Leading by example: Municipal operations

- Energy Audits in building & ops
- Large building retrofit
- Traffic lights retrofit
- Street light retrofit
- SWH installation
- Development to ensure stores stock EE lighting
- Facility Manager Training
- Occupant behavior workshops & training
- Smart meter installations

Assess further potential for efficiency across the City assets and operations

Mainstream EE in the City (Develop an Energy Efficiency Policy for the City)
Thank You