

**Exploring Pathways To Transform African Cities Into  
Low Emission And Sustainable Cities**

# **THE CASE OF KWADUKUZA LOCAL MUNICIPALITY (SOUTH AFRICA)**

**Ninth Africa Carbon Forum**

**29 June 2017**



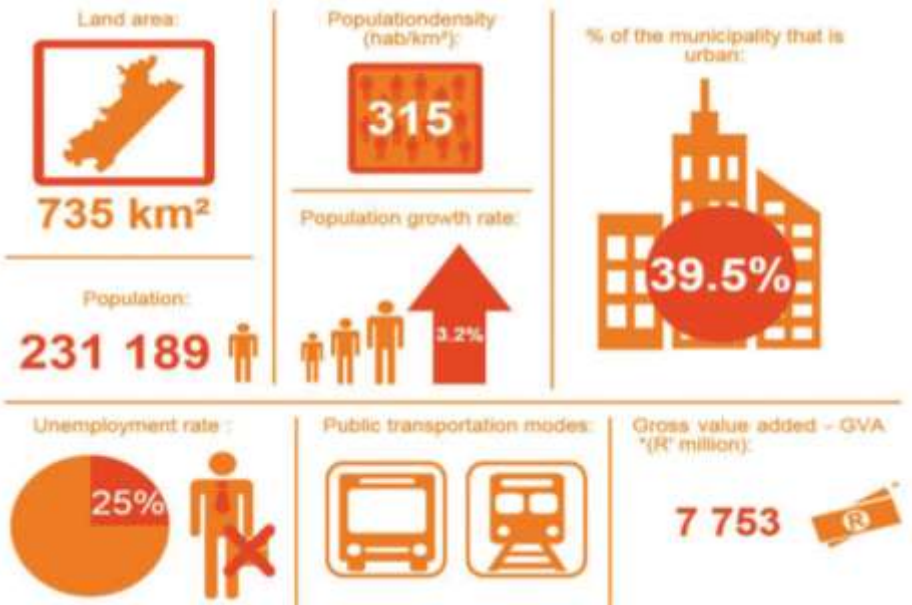
# PRESENTATION OUTLINE

1. KWADUKUZA LOCAL MUNICIPALITY CONTEXT
2. LOW EMISSION PATH
3. LOW EMISSION STIMULUS
4. LOW EMISSION VISION
5. ENERGY PICTURE AT A GLANCE
6. URBAN ENERGY EMISSIONS PROFILE
7. ALIGNMENT OF MUNICIPAL OBJECTIVES & POLICIES
8. AFFIRMATION OF LOW EMISSION TRAJECTORY
9. CHALLENGES
10. LESSONS LEARNT

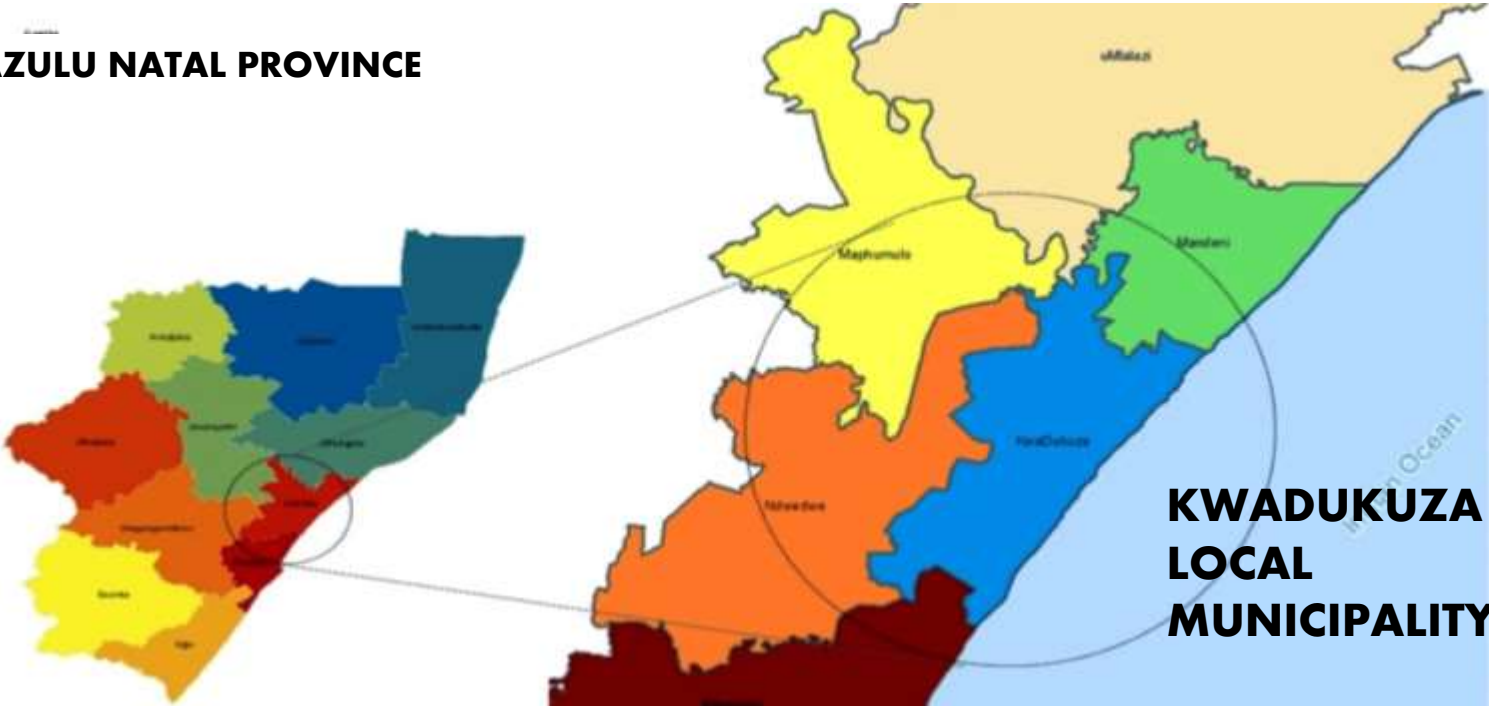


# KWADUKUZA LOCAL MUNICIPALITY CONTEXT

## SOUTH AFRICA



## KWAZULU NATAL PROVINCE



**KWADUKUZA  
LOCAL  
MUNICIPALITY**

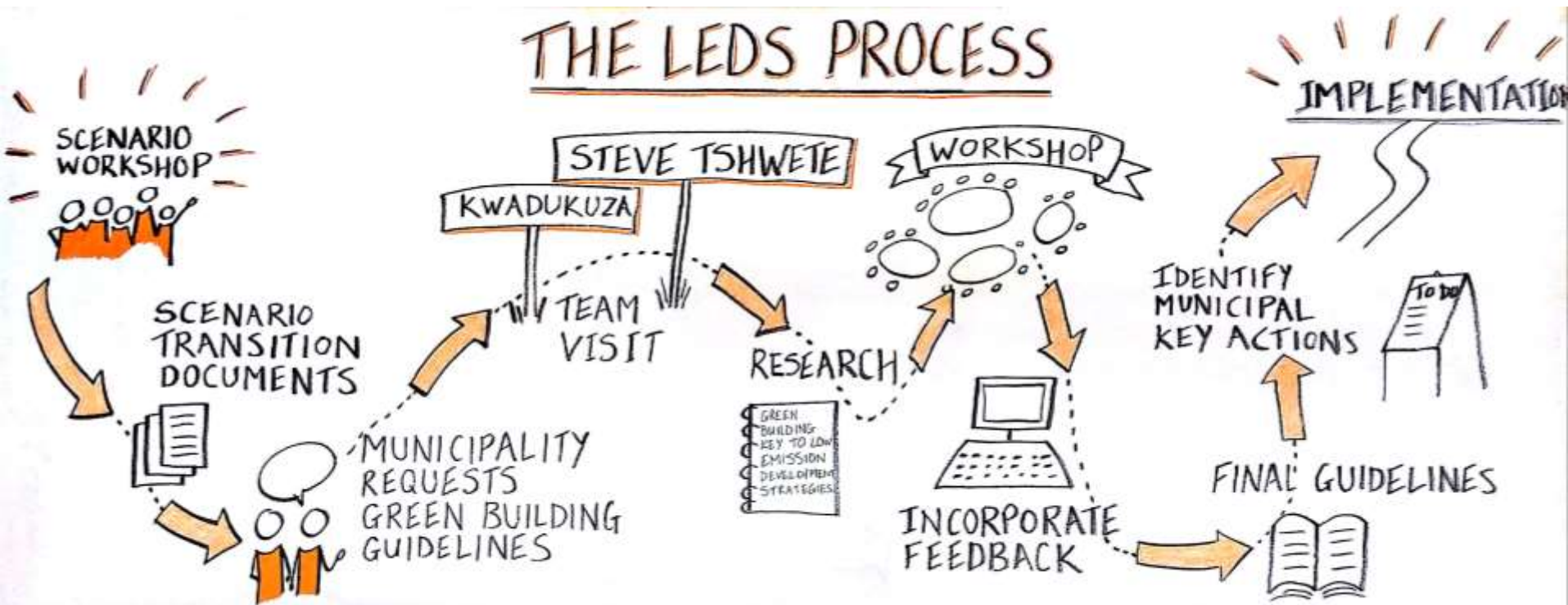
# KWADUKUZA LOW EMISSION PATH



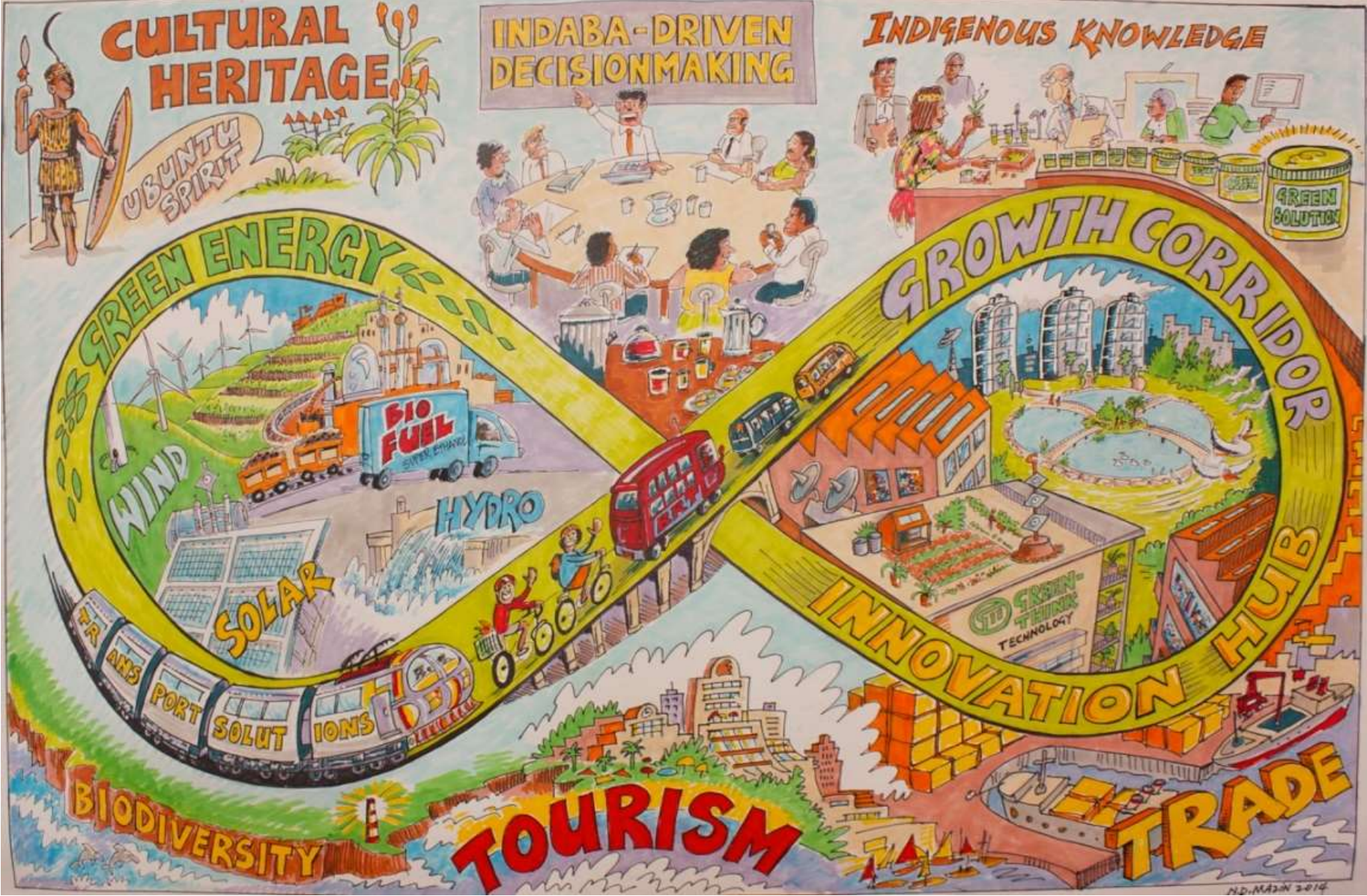
# KWADUKUZA LOW EMISSION STIMULUS

## □ ICLEI Programme- 2013

### ➤ Capacity / Technical Support



# KWADUKUZA LOW EMISSION VISION





Where is KwaDukuza?  
Click on the map to view in google maps



**GENERAL INDICATORS**

POPULATION 231 889	POPULATION DENSITY PER 1000 735
CAR OWNERSHIP 36% OF HOUSEHOLDS	POPULATION GROWTH 3.2%
ACCESS TO ELECTRICITY FOR LIGHTING 90%	ON 60% RENEWABLE EN 0.29%

**ENERGY USE & EMISSIONS BY TYPE**

**ENERGY (GJ) | TONNES**

ELECTRICITY	2 299 023	657 529
WATER	1 864 415	136 023
PETROL	1 130 520	85 559
DIETARY SERVICES OR	19 681	1359
HEATING	1689	118 174
COAL	1363	92
<b>TOTAL</b>	<b>5 316 699</b>	<b>988 727</b>

**ENERGY USE %**

**43.2%**

**35.1%**

**21.3%**

-0.4%

**EMISSIONS %**

**65.8%**

**13.6%**

**11.8%**

**9.9%**

-0.1%

**SCOPE 1 EMISSIONS** 509 697t

**SCOPE 2 EMISSIONS** 473 416t

**SCOPE 3 EMISSIONS** 25 289t

1 Gigajoule = LIT FOR 6 MONTHS

**ENERGY (GJ) | TONNES**

TRANSPORT	2 982 548	220 652
RESIDENTIAL	813 816	223 516
COMMERCIAL & INSTITUTIONAL	577 509	158 815
INDUSTRIAL & MINERAL	577 705	272 523
AVIATION & SHIPPING	268 241	71 566
LOCAL GOVERNMENT	64 032	15 132
AGRICULTURE	40 048	11 233
WASTE	-	9675
LAND USE	-	25 289

**ENERGY USE %**

**56.1%**

15.3%

10.9%

10.9%

4.9%

1.2%

0.8%

**EMISSIONS %**

**27%**

**22.2%**

**21.9%**

**15.7%**

**7.1%**

2.9%

1.5%

1.1%

1%

**TOTAL ENERGY USE & EMISSIONS**

**TOTAL** 5 316 699 GJ | **CARBON EMISSIONS** 1 008 402t

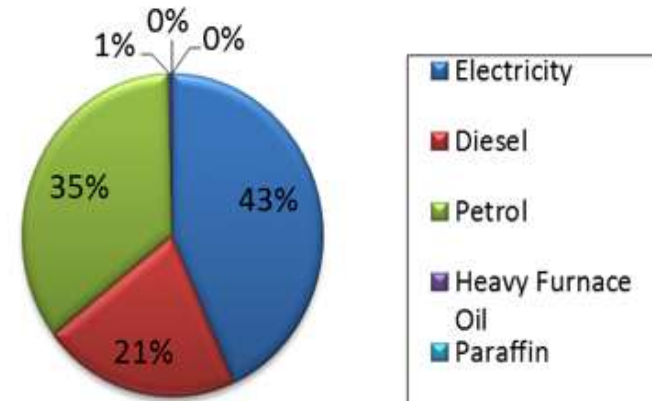
**4.36t** TONNES CO<sub>2e</sub> | PER PERSON



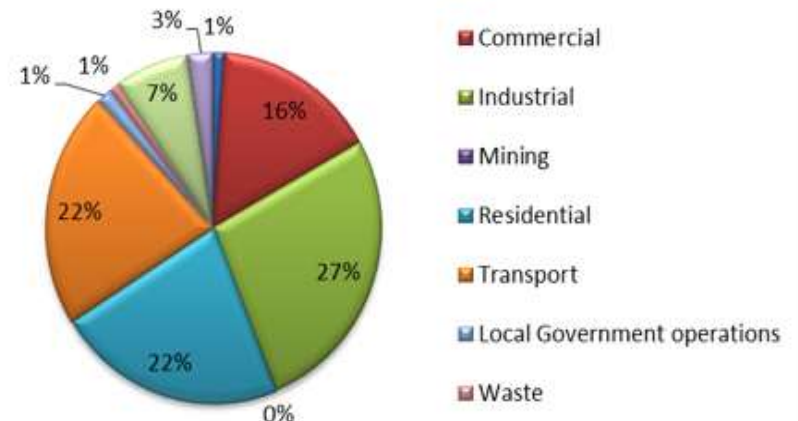
# ENERGY PICTURE AT A GLANCE

- ELECTRICITY DOMINANT ENERGY TYPE USED (**43%** OF TOTAL 5.3 MILLION GJ OF ENERGY CONSUMED)
- LIQUID FUELS OF DIESEL (**21%**) AND PETROL (**35%**) BEING THE SECOND AND THIRD DOMINANT ENERGY TYPES USED RESPECTIVELY.
- **98%** EMITTED BY THE COMMUNITY (I.E. INDUSTRIAL, RESIDENTIAL, TRANSPORTATION ETC. ACTIVITIES).
- **2%** EMITTED DIRECTLY BY THE LOCAL AUTHORITY OWN OPERATIONAL ACTIVITIES

**KDM Energy Use (GJ) by Fuel, 2012**

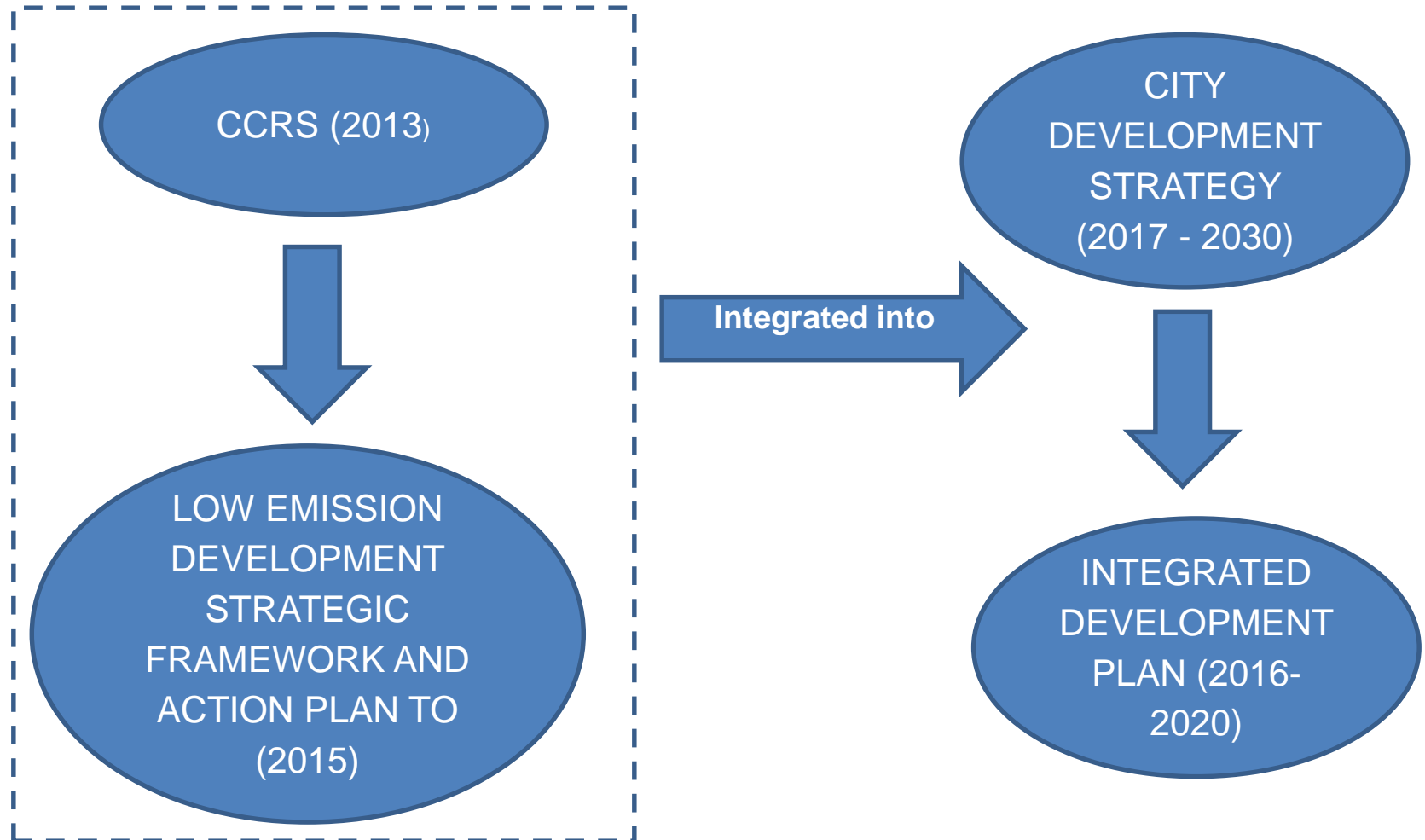


**KDM Emission (tCO<sub>2</sub>e) by Sector, 2012**





# ALIGNMENT OF MUNICIPAL OBJECTIVES



# AFFIRMATION OF LOW EMISSION TRAJECTORY

## ❑ **KDM SIGNATORY OF :**

- Compact of Mayors Coalition,
- Durban Adaptation Charter (DAC) And
- Active Member of Central KZN Climate Change Compact (KZN CCC),

## ❑ **MEMBER OF ICLEI-LOCAL GOVERNMENT FOR SUSTAINABILITY.**

## ❑ **DEVELOPMENT APPROVAL- CONDITIONS:**

- applicable standards on energy efficiency and water conservation,
- Green Building Guidelines

## ❑ **IMPROVED PUBLIC-PRIVATE PARTNERSHIPS/ STAKEHOLDER ENGAGEMENT,**

## ❑ **INSTITUTIONALISATION OF CLIMATE CHANGE AND ENERGY EFFICIENCY – POLICY, AWARENESS (ON GOING),**

- City Development Strategy - scenario planning outcomes

# AFFIRMATION OF LOW EMISSION TRAJECTORY

- BETTER UNDERSTANDING BY LOCAL BUSINESS THAT CLIMATE CHANGE IS PART OF THEIR BOTTOM-LINE,
- INCREASE COMMUNITY PARTICIPATION ON CLIMATE CHANGE RESPONSE RELATED PROJECTS, ENVIRONMENTAL FORUM COMMUNITY CHAMPIONS,
- BETTER ACCEPTANCE BY THE MUNICIPAL LEADERSHIP THAT ENERGY EFFICIENCY/RENEWABLE ENERGY IS NOT A THREAT TO ITS MAIN REVENUE SOURCE,
- CLIMATE CHANGE BUDGET ALLOCATION

# AFFIRMATION OF LOW EMISSION TRAJECTORY: PROGRAMMES/ PROJECTS

- ❑ **IDENTIFICATION OF AND IMPLEMENTATION OF PROJECTS:**
  - Solar Powered Streetlights
  - Paperless Administration:
    - Electronic agenda
  - Office Recycling Project (as outcome of staff awareness),
  - Local Leadership Initiative:
    - Household Energy Efficient Kit Project- Groutville Care Homes Project (20 Homes)
  - Hotbox Rollout Project,

# CHALLENGES

- ❑ **MINDSET:** BUSINESS AS USUAL VS LOW EMISSION TRAJECTORY
- ❑ **SPATIAL INEFFICIENCY:** FRAGMENTED SETTLEMENT PATTERNS  
(E.G. GATED ESTATES)
- ❑ **MOBILITY,**
- ❑ **RESOURCES:** FINANCIAL, HUMAN CAPACITY
- ❑ **ACCESS TO TECHNOLOGY,**
- ❑ **RELEVANT LEGISLATION,**
- ❑ **COMPETING PRIORITIES:** SERVICE DELIVERY BACKLOGS VS NEW  
TRAJECTORY

# LESSONS LEARNT

- ❑ **POLITICAL CHAMPION & BUY-IN**
- ❑ **CLIMATE CHANGE CHAMPIONS (TECHNICAL) - ASSIST IN MAINSTREAMING LOW EMISSION DEVELOPMENT WITH OTHER LINE DEPARTMENTS**
- ❑ **BUILDING PARTNERSHIPS**
- ❑ **BASELINE INFORMATION: KEY-MANAGE AND MONITOR WHAT YOU KNOW – SET TARGETS AREAS TO FOCUS ON (DEVELOP CLIMATE CHANGE POLICIES)**
- ❑ **BUILDING MOMENTUM - QUICK WIN PROJECTS**
- ❑ **REPORTING ON MUNICIPAL ACTIONS ON GLOBAL PLATFORMS ASSISTS TO UNLOCK OPPORTUNITIES**
- ❑ **ESTABLISHING APPROPRIATE (COMMUNITY) STRUCTURES**
- ❑ **CONTINUOUS AWARENESS WITH RELEVANT STAKEHOLDERS (E.G. POLITICAL, ADMINISTRATION, COMMUNITY).**



**THANK YOU...**



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