

KwaDukuza Local Municipality

Low Emission Development Strategic Framework and Action Plan

Executive Summary

**Building on the Climate Change Response
Strategy (2013)**

**A direct input to the City Development
Strategy (2015-)**

*What kind of development do we want to promote, what kind of city do we
want to be?*

Foreword from the Mayor

Climate change is the most serious global challenge of our time. The impacts of climate change on communities around the world are increasingly evident with KwaDukuza being amongst other vulnerable municipality to climate change in KwaZulu Natal; South Africa. Taking cognizance of these challenges, a KwaDukuza Climate Change Response Strategy was developed in 2013 to further understand the risks and required responses. To operationalize the Strategy and meet the municipal obligations to contribute in minimizing emissions, ensure access to energy and other basic services, the municipality partnered with ICLEI Africa to develop the Urban Low Emissions Development Strategy (2012-2015) and simultaneously became a member of ICLEI in 2013.

The Urban Low Emissions Development Strategy (Urban LEDS) Planning process involved rigorous and transparent multi-stakeholder engagements with local business, Government Departments, neighbouring Municipalities, Non-Governmental Organisations and Communities. Urban LEDS presents a wide range of economy-wide interventions to be implemented across the public and private sectors. The actions include concrete mitigation interventions and provide for the enabling conditions required for effectively responding to climate change as per departmental responsibility for 2015-2016 IDP year and beyond; integrated in the 2016- 2021 IDP, SDBIP, and Organisational score card accompanied with budget requirements. Considering the ambitious nature of the Urban LEDS Action Plan; support, partnerships, investments and technology innovations are required for the implementation of the actions and achievement of the goal of Low Carbon Pathway.

KwaDukuza Municipality council resolved to be members of the Central KwaZulu Natal Climate Change Compact which is a regional partnership on climate change with central KwaZulu-Natal municipalities, KwaDukuza Municipality is also a signatory and a member of the Durban Adaptation Charter which saw the signing ceremony being held at the LOCS Congress 2015. In the same Congress KwaDukuza made a commitment to be a member of Compact of Mayors which gained 36 new cities and towns.

Being one of the local municipalities in the country to pitch for this status is a re-affirmation of our commitment in the fight against climate change. Our vision statement holds true of our successful interventions on climate challenges of the past. There is a clear indication that we are a progressive city in the making, on our path towards low carbon economy.

On behalf of Council, I therefore present to you the Low Carbon Emission Strategy and its action plan, which is a critical tool for KwaDukuza to realise its own vision and also meet the target set by the National Development Plan related to low carbon economy.

Together we can do more!

Messages from stakeholders

This framework and action plan has been collaboratively created with a diverse range of local stakeholders. The municipality has jointly-planned with them. Their views, insights and

ideas have been invaluable in shaping KwaDukuza's 2030 vision and the steps it needs to take to get there.

Some of the stakeholders involved in the process share their insights below.

"The participatory and consultative approach taken by KwaDukuza Municipality in developing their LED Strategic Framework and Action Plan is a good practical example of how neighbouring Municipalities can collaborate to tackle mutual challenges and opportunities, particularly around Climate Change. Mr Sikhumbuzo Hlongwane and his team have done a sterling piece of work" said Magash Naidoo, EThekweni Municipality

"SALGA congratulates the municipality for putting forward such a plan, ambitious and yet grounded into the local reality, with clear indicators...The document recognizes the SALGA EERE strategy for local government and aligned some of its action to it, which is great" said Bright Nkontwana, SALGA

"The iLembe District Municipality welcomes and supports the KwaDukuza Low Emission Development Strategic Framework and Action Plan and the formulation process has been consultative and ensured that all stakeholders played an integral role throughout. The recommendations contained herein will assist in ensuring we maximize on opportunities available by virtue of our region being designated the Renewable Energy Hub of the Province. On a strategic level, there is alignment between the KwaDukuza LED Strategic Framework and Action Plan and the iLembe Regional Spatial Development Plan (IRSDP-Vision 2030). Therefore, as a District, we support the Regional Enabling Strategies contained in this document. In this respect, it will be essential that the action plan developed is integrated into the 4th Generation Municipal IDPs, hence the iLembe District Growth and Development Plan, which will be adopted imminently, will also have to infuse the strategies contained in the KwaDukuza LED Strategic framework and action plan" said Linda Mncube, ILembe District Municipality.

Strategic Framework at a glance

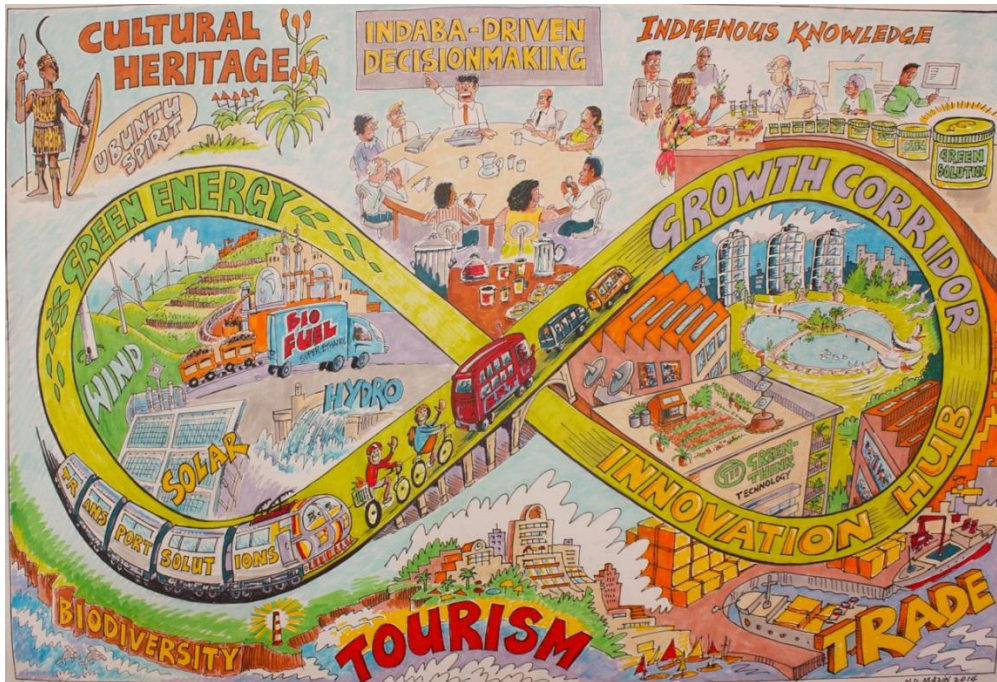
"By 2030, KwaDukuza shall be a vibrant city competing in the global village economically, socially, politically and in a sustainable manner."

The low-carbon vision complements the overall municipal vision by describing the kind of city KwaDukuza can become:

Low-carbon vision

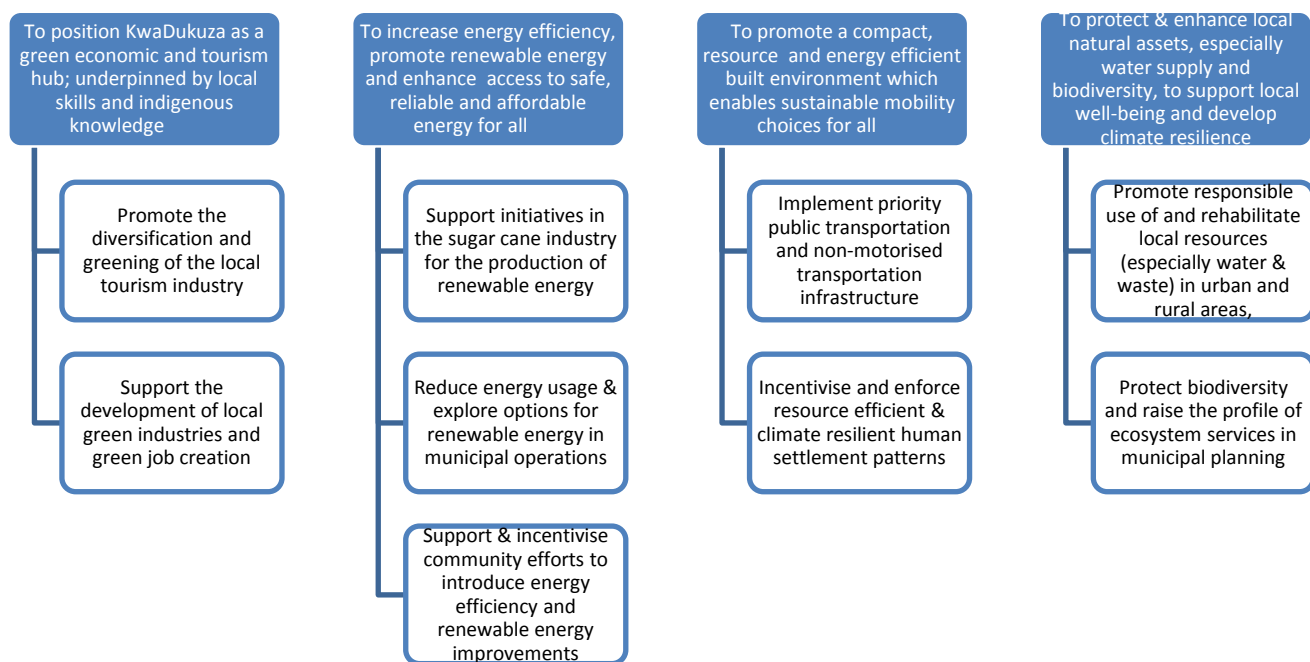
By 2030 Kwadukuza will have successfully managed its transition to low carbon development and will be:

- *A distinctive urban launch pad for the Durban / Richards Bay Corridor*
- *A job-rich green manufacturing, renewable energy and logistics hub*
- *A model of integrated resource management and climate change adaptation*
- *A Shaka-inspired heartland and thriving tourism destination*



Umuzi wengcebo (House of Wealth)

Strategic Objectives and flagship strategies



Cross-cutting and Enabling Strategies

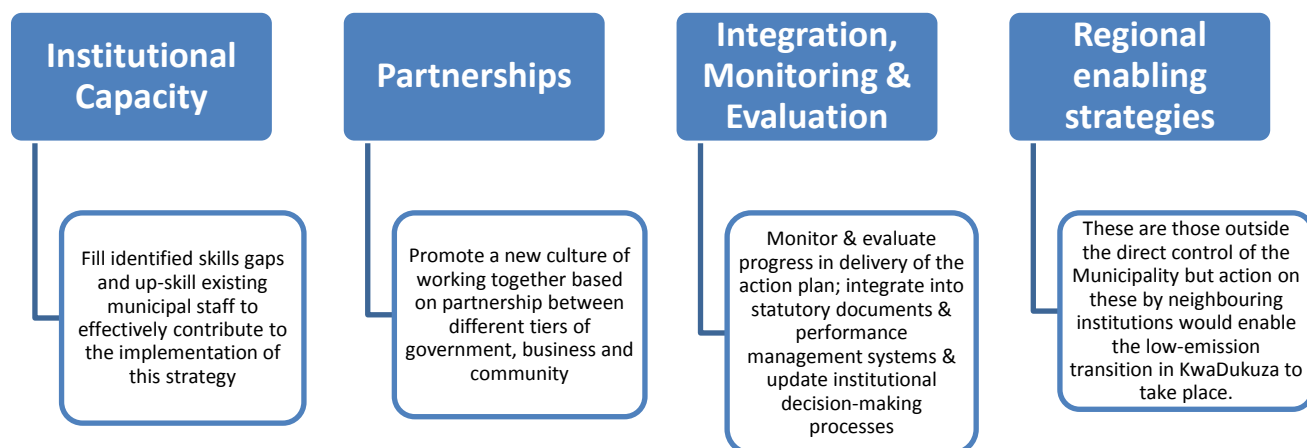


Figure 1 KwaDukuza's Strategic Framework Summary

1. Introduction

KwaDukuza Local Municipality (KDLM) is a place of fast growth and opportunity, situated:

- in the middle of a strategic Provincial growth corridor from Durban in the South to Richards Bay in the North, including being a residential hub for commuters;
- on beautiful coastline, with opportunities for significant tourism;
- in a region of significant and nationally recognised renewable energy generation potential through sugar cane production
- and is the fastest growing Municipality in KwaZuluNatal;

By 2030, the municipality aims to be an economic powerhouse and a recognised South African city. Yet the Municipality also faces stark challenges to manage its growth effectively. Its challenge is to create a city with quality, efficient infrastructure and inclusive employment opportunities, in a manner that is low-carbon and manages natural resources effectively.

1.1 What is low emission development?

*An **Urban Low Emission Development Strategy** defines a pathway to transition a city to a low-emission, green and inclusive urban economy, through its integration into city development plans and processes.*

Low emission, or low carbon development, is about meeting the development needs of the municipality while minimising its contribution to climate change, and helping it prepare for its impacts. It is about exploiting opportunities for green and clean economic growth, and creating strong local communities and businesses that can be resilient to resource and climate shocks.

A low emission future for KwaDukuza is not a “nice to have” but a basic survival strategy in a world undergoing turbulent social, economic and technological change.

The relationship between this framework and the other strategies described can be seen below:

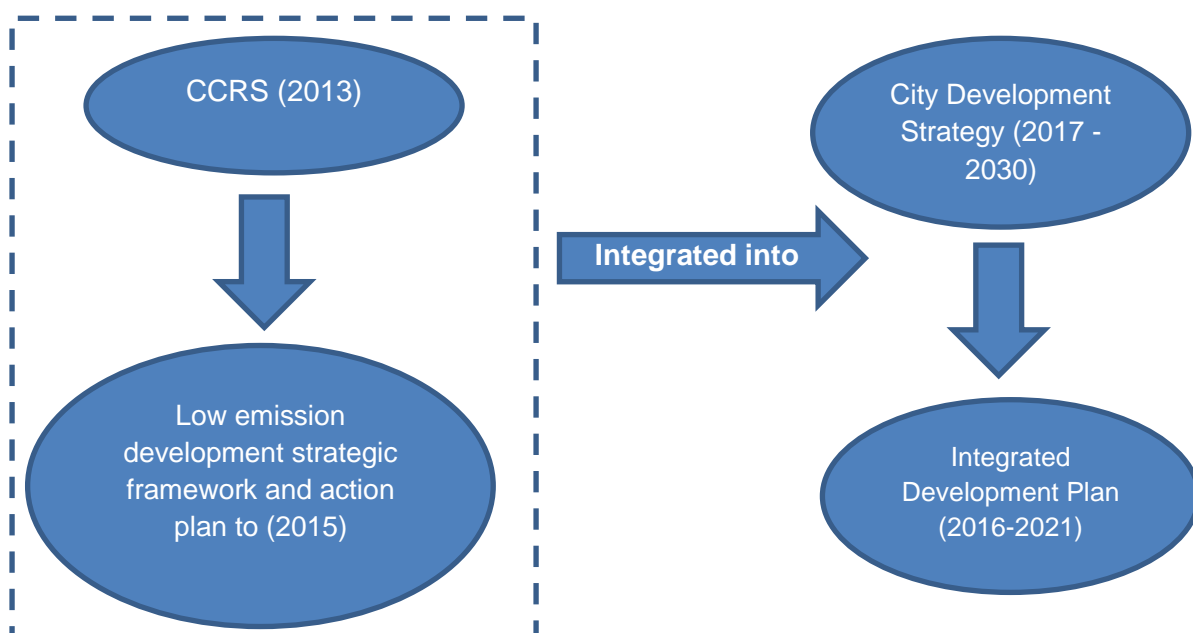
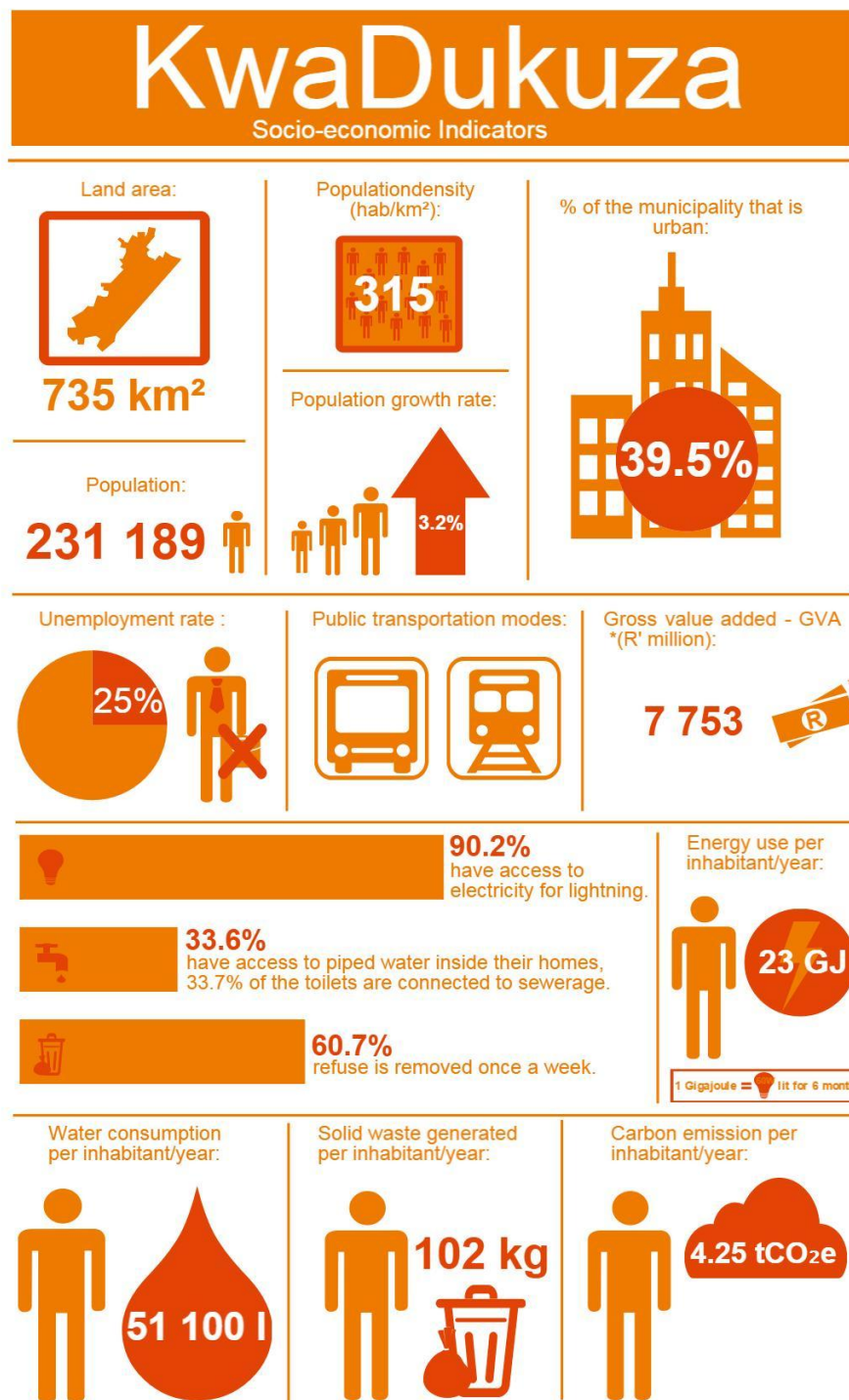


Figure 2 Relationship between the framework & other strategic documents

2. KwaDukuza at a glance



Data from work conducted by StatsSA [2011], KwaDukuza Local Municipality [2012] and the GHG inventory report by ICLEI Africa [2012]. For more information about the Urban-LEDS project, please visit www.urban-leds.org or email urban-leds-southafrica@iclei.org. This document has been produced with the financial assistance of the European Union. The views expressed herein can in no way be taken to reflect the official opinion of the European Union.

 **URBAN-LEDS**
URBAN LOW EMISSION DEVELOPMENT STRATEGIES

 **ICLEI**
Local Governments for Sustainability

Implemented by:

 **UN-HABITAT**
FOR A BETTER URBAN FUTURE

Founded by:



powered by
 **Piktochart**
make information beautiful

3. KwaDukuza's Energy Footprint & Climate Vulnerability

Energy use

Electricity is the dominant energy type used in KwaDukuza (43% of total 5.3 million GJ of energy consumed), a pattern that is consistent with other municipalities in South Africa.

The sectors consuming the greater proportion of energy in the area are the transportation (56%), residential (15%), Industrial (11%), and Commercial (11%) sectors.

91.2% was emitted by the community and 8.8% emitted directly by the local authority (with the inclusion of electrical losses). The results show that everyone in KwaDukuza makes a contribution, and everyone has a responsibility to reduce their emissions.

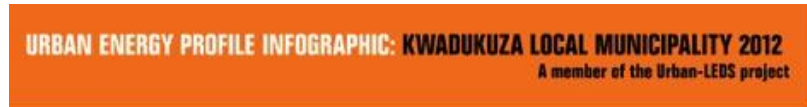
The carbon and energy intensity in KwaDukuza is similar to that of like-sized municipalities, with similar economic activities, and demographics. More detailed statistics on the energy use and carbon emissions can be found in the detailed Greenhouse Gas Inventory Report, with high-level summary statistics in the infographic below.

Climate Vulnerability

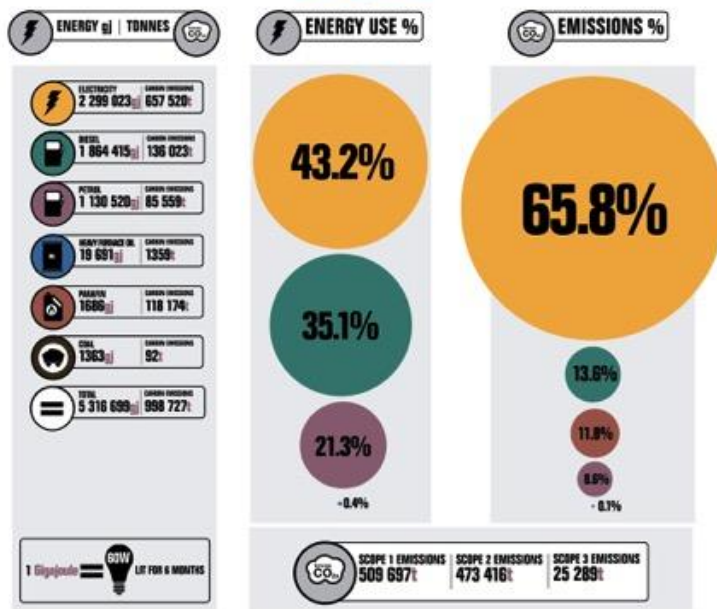
Climate Change Adaptation can be defined as making sure that existing development, activities and services are able to cope with the environment that will result as the climate changes. Within iLembe District, KwaDukuza Municipality is one of two coastal local municipalities and coastal vulnerability index findings indicated that KwaDukuza Municipality has many *high risk* areas (43%) – in particular the coastline areas. This coastal vulnerability is strongest in KwaDukuza, where the majority of human resources are located. Fishing hotspots, harvesting areas, bird sanctuaries and coastal public property are identified as being adjacent to or in areas of high risk. The CVI identifies Ballito, Salt Rock, Shaka's Rock, Sheffield Beach and Zinkwasi as areas of high risk.

In addition, KwaDukuza is projected to experience a slight increase in precipitation, apart from the months of June, July and August when it is projected to decrease. A projected 50% increase in sugarcane yields as a result of the combination of projected increases in both temperature and rainfall, but an increase in temperature also coincides with an increase in reproduction of sugarcane pests which means that yields can potentially be threatened

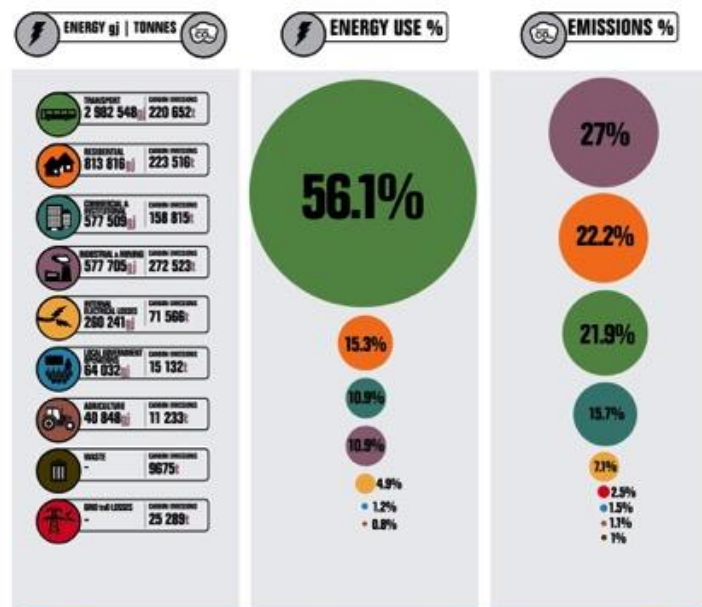
Figure 3. Infographic showing KwaDukuza Municipality's urban energy and emissions profile.



ENERGY USE & EMISSIONS BY TYPE



ENERGY USE & EMISSIONS BY SECTOR



TOTAL ENERGY USE & EMISSIONS



Data from work conducted by CS21 Africa 2012, March 2013.

URBAN LED

Implemented by:
ICLEI UNOHABITAT
Local Government for a Better Urban Future

Funded by: 
 Designed by: 

Designed by:

**CHANG
AGEN**

6 Transitions to meet the vision

Six transitions have been identified that KwaDukuza will have to move through in order to achieve the House of Wealth scenario by 2030. To this end, KwaDukuza has also set an aspirational target of a 42% reduction in community-wide greenhouse gas emissions against the business as usual projection for that year. This target will be met through a combination of specific measurable low emission development actions, and through fulfilling the various objectives outlines in each of the transition areas.

Economic	<ul style="list-style-type: none">•FROM: Dual, old (extractive),decent-job poor economy•TO: Integrated, inclusive green economy, decent-job rich, knowledge economy embracing innovation, design and indigenous knowledge
Energy	<ul style="list-style-type: none">•FROM: High carbon, inefficient, fossil fuel based•TO: Low carbon, green/renewable and efficient
Social	<ul style="list-style-type: none">•FROM: insecure, unhealthy, low quality of life & social fragmentation•TO: secure, healthy and social cohesion
Spatial	<ul style="list-style-type: none">•FROM: fragmented, sprawling, chaotic, two-worlds, private transport, car-orientated and low mobility•TO: integrated, compact, well-managed, public transport and transit orientated and high mobility
Ecological	<ul style="list-style-type: none">•FROM: wasteful, degenerative and vulnerable•TO: efficient, regenerative, resilient and ecosystem-based
Institutional	<ul style="list-style-type: none">•FROM: silo, departmental, fragmented, blinkered, imposed and exclusive•TO: partnership, integrated, holistic, community-centric local leadership

Figure 4 6 transition areas to meet the 2030 vision

Objective 1: To position KwaDukuza as a green economic and tourism hub; underpinned by local skills and indigenous knowledge

The ultimate aim might be called a “green economy”. This improves human well-being and reduces inequalities over the long term, while not exposing future generations to significant environmental risks and ecological scarcities. This type of economy should take into account

concerns over energy costs, energy security, environmental risks, limited natural resources, declining ecosystem services and fears over economic slowdown and uncertainty. This means that economic activities and their environmental implications need to be rethought

Flagship Strategy 1

Promote the diversification and greening of the local tourism industry

KwaDukuza's Zulu and Struggle history as well as its natural environment offer valuable cultural and ecological tourism opportunities. The municipality is also home to 7 estuaries and 3 nature reserves. These estuaries can be used as tourist attractions. This has the potential to create jobs & skills development in the cultural tourism centres, increase environmental tourism and increase employment & skills development in local communities near the estuaries

Flagship Strategy 2

Support the development of local green industries and green job creation

This strategy has the potential to lower the emissions of the municipality by attracting/supporting local green business, provide these businesses comparative advantage over firms in other municipalities and to create green jobs. Procuring locally will create jobs in local industry and pursuing green procurement will help build green industries and create green jobs.

Example actions from the full action plan

- *Line departments to request resource efficient products and services in their tender processes wherever possible, demonstrating that they have investigated resource efficient options*
- *Work with a tourism industry organisation/the local Chamber of Commerce to encourage responsible tourism principles*
- *Explore a partnership with eThekweni to promote responsible tourism in the greater Durban area*

Objective 2: To increase energy efficiency, promote renewable energy and enhance access to safe, reliable and affordable energy for all

To meet its national CO₂ reduction targets, the South African economy will have to undergo a rapid change in the way it produces and uses energy from fossil fuels to renewable energy. While local studies have identified the District as having significant biomass

potential, and to a limited extent wind, solar and hydro, renewable energy production remains low. With approximately 10% of households in KwaDukuza without access to electricity, and approximately 10% using paraffin or wood for cooking, reducing emissions will involve ensuring sustainable access for all, with simultaneous reductions in energy consumption by intensive users.

Flagship Strategy 1

Support initiatives in the sugar cane industry for the production of renewable energy

Bagasse as a by-product of sugarcane production is a valuable renewable energy resource. The municipality sees the benefit of working with the sugar industry to encourage biomass to energy production – making the most of the most abundant renewable energy resource locally. A more detailed assessment of the options available to the both the municipality and the sugar cane industry can be found in the Energy Transition report (See Appendices).

Flagship Strategy 2

Reduce energy usage & explore options for renewable energy in municipal operations

While the municipality is directly responsible for only a small amount of the emissions in KwaDukuza, investing in the efficiency of municipal services and operations is a first entry point to showing leadership on low emission development. Apart from saving GHG emissions, these activities also save operational costs that the municipality can invest into other activities and policies.

Flagship Strategy 3

Support & incentivise community efforts to introduce energy efficiency and renewable energy improvements

The biggest users of energy in KwaDukuza are the industry, residential, commercial and transport sectors. The municipality can only support and encourage efforts by these groups to become more energy efficient, and adopt renewable energy. Businesses can take a lead through taking part in private sector schemes to encourage energy efficiency, or making use of the energy efficiency tax incentive – preparing for the introduction of a carbon tax in 2017. Residents can save money and reduce emissions, and increase the amount of electricity capacity available for new developments, by installing solar water heaters and other energy saving devices.

Example actions from the full action plan

Support Gledhow Sugar Mill's application for renewable energy co-generation project

All new street light installations to be LED

Community showcase: energy & sustainability retrofit of 20 orphanage homes

6.3 Spatial Transition¹

Background: what is a low-emission spatial transition?

¹ The information in this section is edited from the "Specialist Paper on the Spatial Transition towards a Low Emissions City in KwaDukuza Local Municipality" paper prepared for KwaDukuza by FutureWorks, available from the municipality or from ICLEI – Africa

The spatial structure of urban areas has been found to play an important role in their greenhouse gas emissions profiles. The level of compaction, land use integration and settlement densification achieved in cities affects both transport and public sector energy emissions, and is linked to the cost and financial sustainability of public infrastructure – especially public transport systems. Interventions to optimise efficiencies in infrastructure, mobility and land not only impact emissions. They also tend to be associated with lower costs, better economic returns and greater infrastructure life spans, which make the cities that can achieve these aims attractive places to live and invest.

The resilience and adaptability of cities to climate change is also directly linked to their spatial structure. Understanding the spatial patterns of social, economic and ecological vulnerability to climate change can be used to inform risk-responsive spatial planning that protects people, infrastructure and investment from identified risks.

Status quo assessment

Despite a reported 21% growth in total municipal population in the 5 years between 2006 and 2011, the urban population grew by 54%, and the non-urban population decreased by 26%, indicating a rapidly urbanising local population.

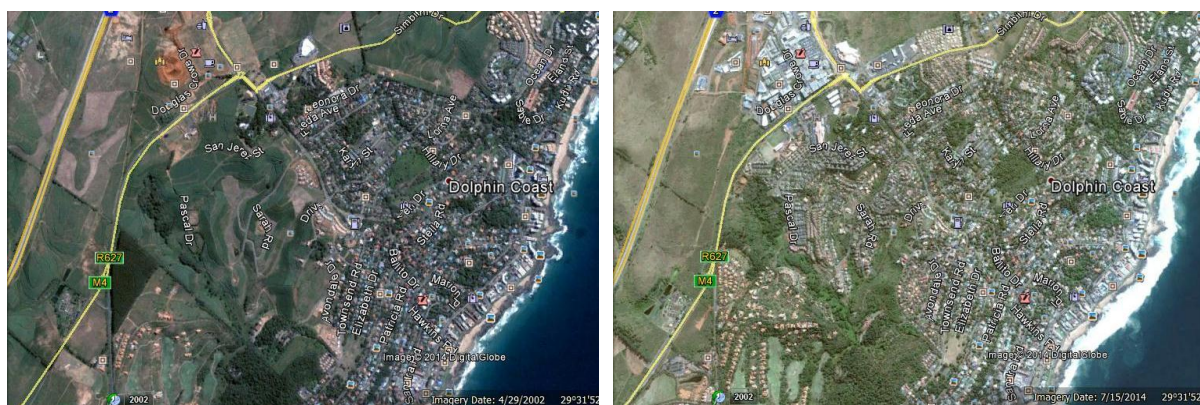
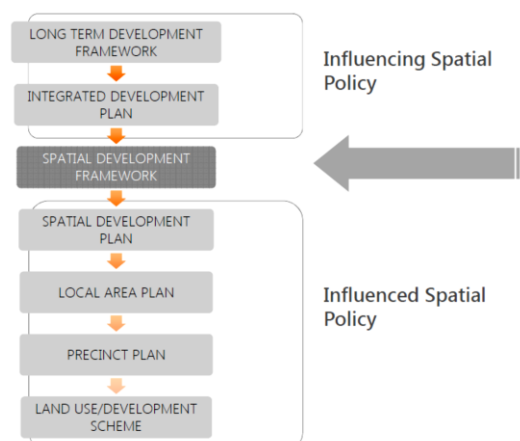


Figure 5 Map left: Ballito 2002. Map right – Ballito 2014. Showing rapid densification (Source:: Google Earth)

Nevertheless, the KwaDukuza Local Municipality area remains a largely agricultural landscape (commercial sugar cane) with very low settlement densities. Major future development is planned between Umhlanga and Ballito as part of the Integrated Provincial Aerotropolis Strategy, and this is likely to be a key driver of change in spatial form in the KwaDukuza over the next 20 years. Continued pressure for coastal development is likely with this and the development of Dube Trade Port.

There is currently no integrated public transport system in KwaDukuza. 60% of trips are made in private vehicles, with 3% being made by public transport. There is limited provision made for non-motorised transport within centres. Despite this, and a lack of delineated urban edge, the boundaries of major towns have historically been



contained by the surrounding high value agricultural lands.

Given the large new developments on KwaDukuza's doorstep, strong growth management will be required which promotes public transport and encourages appropriate densification.

Figure 6 Hierarchy of spatial development policies in KwaDukuza

However, some of this development will not be under KwaDukuza's direct control and so strong partnerships will be necessary.

Strategic approach for the future

Strategic objective

To promote a compact, resource and energy efficient built environment which enables sustainable mobility choices for all

Flagship Strategy 1

Implement priority public transportation and non-motorised transportation infrastructure

A long-term goal is for KwaDukuza to develop in-house strategic transport capacity. In the meantime, continuing with localised projects to construct inter-modal transport facilities, and incorporating non-motorised transport facilities & options into local planning, is to be prioritised. There are links to the tourism industry that can also be encouraged to provide lower carbon transport options for tourists travelling from King Shaka airport.

Flagship Strategy 2

Incentivise and enforce resource efficient & climate resilient human settlement patterns

A flagship set of green building guidelines will be introduced and progressively incentivised and enforced. If adhered to, this will promote a resource efficient built environment in areas as diverse as water, food, waste, energy, sustainable transport options, biodiversity, green procurement & construction materials. The full implications of climate change vulnerability are to be integrated through the commissioning of a spatial-based vulnerability and disaster risk assessment which can then be integrated into the municipality's spatial plans.

Outcome indicators

1. Change in modal split between private & public transport use (No baseline)
2. Change in average residential density per square kilometre, within & without the urban edge (**Dwelling units per hectare?**)

6.4 Ecological Transition²

Background: what is a low-emission ecological transition?

Human health depends upon living with healthy ecosystems that provide a wide range of natural goods and services such as producing food and water, mitigating urban heat islands and air pollution, managing urban stormwater, treating and diluting urban waste/water, and

² The information in this section is edited from the "Specialist Paper on the Ecological Transition towards a Low Emissions City in KwaDukuza Local Municipality" prepared for KwaDukuza by FutureWorks, available from the municipality or from ICLEI – Africa

providing places for recreation. In addition, this “ecological infrastructure” has been shown to play a key role in mitigating greenhouse gas emissions through carbon sequestration, and improving the ability of cities, residents and business to adapt to climatic change. This is also an issue in rural areas; with the potential to use ecological techniques in agriculture to create jobs and preserve biodiversity at the same time.

In some cases, strategies to achieve low emissions development may conflict directly with the objective of maintaining functional ecological infrastructure. In particular, city densification and infill strategies can result in an intensification of the ‘urban outputs’ that the ecological infrastructure is expected to deal with (e.g. increased stormwater peaks, more polluted urban stormwater, more wastewater etc.), resulting in degradation. An integrated approach is therefore needed, where ecological infrastructure is recognised as an asset within the spatial fabric of the city. The ecological transition therefore requires proper management of both natural *and* built environments, in order to optimise the desired ecosystem services for human needs, and buffer climate change risks and vulnerabilities.

Status quo assessment

The KwaDukuza Local Municipal Area has been largely transformed from a natural state to agricultural and urban land uses. According to the Municipality’s Biodiversity and Open Space Plan (BOSMaP), only 24.4% of the municipal area remains untransformed. Important remaining areas of biodiversity are spatially fragmented. This makes management of the ecological systems difficult, and elevates the vulnerability of the ecosystems to climate change, development pressures and urban outputs.

Key issues that currently affect the coverage, condition and connectivity of natural ecosystems in the municipal area include cultivation / drainage of wetlands for commercial and subsistence agriculture, sand mining in watercourses, uncontrolled fires / burning, transformation of natural habitats and associated buffer areas for settlement (informal and formal), sedimentation and altered flow regimes in watercourses as a result of agricultural abstraction and management practices, damming of watercourses resulting altered flow patterns, and alien invasive plant infestations.

The concept of integrating ecological infrastructure, culturally important and agriculturally productive landscapes in spatial planning is articulated in the SDF (IYER, 2012). However, much of this thinking still needs to be translated into the municipal SDP’s, LAP’s and precinct plans. In addition, the BOSMaP evaluates and attempts to map ecosystem services in the municipal area, but does not yet include the important role of the agricultural and the built environment in this.

Strategic approach for the future

Strategic objective

To protect & enhance local natural assets, especially water supply and biodiversity, to support local well-being and develop climate resilience

Flagship Strategy 1

Promote responsible use of and rehabilitate local resources (especially water & waste) in urban and rural areas, especially in the context of climate change

This strategy refers to a broad approach to manage local water and waste resources in line with efficiency, green economy principles, and in anticipation of local climatic changes. This broad strategy includes efforts by the municipality to ensure its own internal resource efficiency, as well as implementing its waste management strategy and capacitating itself to deal with the waste challenges in the area. Finally, there is an opportunity to create jobs through the creation of sustainable crop nurseries – of crops that can be sowed alongside sugar cane and helps mitigate soil erosion and conserve water. The DEA's land user incentive scheme could be investigated for this purpose. Job creation, reduced erosion and increased food security could be the benefits of this approach.

Flagship Strategy 2

Protect biodiversity and raise the profile of ecosystem services in municipal planning

KwaDukuza's BOSMAP forms the backbone of efforts in this strategy – implementing it in full is the priority, while learning from neighbouring municipalities (eg eThekweni), and in the medium term expanding the understanding of local ecosystem processes and services and their spatial variability.

Outcome indicators

Change in hectares of ecological infrastructure under conservancy/stewardship, as a % of the total

This is an aspirational indicator as the municipality does not currently have access to data to track this.

7. Summary: KwaDukuza's Strategic Framework

By 2030 Kwadukuza will have successfully managed its transition to lower carbon development and will be:

A distinctive urban launch pad for the Durban / Richards Bay Corridor
 A job-rich green manufacturing, renewable energy and logistics hub
 A model of integrated resource management and climate change adaptation
 A Shaka-inspired heartland and thriving tourism destination

Table 1 Summary table of KwaDukuza's Strategic Framework

Transition	1. Economic	2. Energy	3. Spatial	4. Ecological
Strategic objectives	To position KwaDukuza as a green economic and tourism hub; underpinned by local skills and indigenous knowledge	To increase energy efficiency, promote renewable energy and enhance access to safe, reliable and affordable energy for all	To promote a compact, resource and energy efficient built environment which enables sustainable mobility choices for all	To protect & enhance local natural assets, especially water supply and biodiversity, to support local well-being and develop climate resilience
Aspirational Outcome indicator(s)- (Red indicates no data currently available)	3. Total GHG emissions in KwaDukuza by sector (tCO ₂ -eq) per unit of GVA or per unit of GDP or per capita	4. Households using electricity for lighting (% of total) 5. Municipal energy consumption (GJ) 6. LED streetlights (% of total) 7. Proportion of renewables to total primary electricity supply (%) 8. Community electricity consumption (GJ) (excluding municipal operations)	9. Change in modal split between private & public transport use 10. Change in average residential density per square kilometre, within & without the urban edge (Dwelling units per hectare?) no data currently available	11. Change in hectares of ecological infrastructure under conservancy/stewardship, as a % of the total No data currently available
Target (year) + baseline	No specific target written into policy/KPI's; tracked only to indicate overall progress 2012 Baseline: tCO ₂ -eq per capita: 4.36. Per unit of GVA: 130.1	4. 100% (2025) Baseline: 90.2% (2011) 5. 8 % reduction target (2018). Baseline: 51 645 Giga Joules (GJ) (2012) 6. No data yet as no streetlight asset inventory	No specific target written into policy/KPI's; tracked only to indicate overall progress	No specific target written into policy/KPI's; tracked only to indicate overall progress. No data

Transition	Economic	Energy	Spatial	Ecological
Flagship programmes/ strategies	<ol style="list-style-type: none"> Promote the diversification and greening of the local tourism industry Support the development of local green industries and green job creation 	<ol style="list-style-type: none"> Support initiatives in the sugar cane industry for the production of renewable energy Reduce energy usage & explore options for renewable energy in municipal operations Support & incentivise community efforts to introduce energy efficiency and renewable energy improvements 	<ol style="list-style-type: none"> Implement priority public transportation and non-motorised transportation infrastructure Incentivise and enforce resource efficient & climate resilient human settlement patterns 	<ol style="list-style-type: none"> Promote responsible use of and rehabilitate local resources (especially water & waste) in urban and rural areas, especially in the context of climate change Protect biodiversity and raise the profile of ecosystem services in municipal planning
Flagship short- term Action	<ol style="list-style-type: none"> Work with a tourism industry organisation/the local Chamber of Commerce to encourage responsible tourism principles Amend the supply chain management policy to incorporate resource efficiency criteria 	<ol style="list-style-type: none"> Support Gledhow Sugar Mill's application for renewable energy co-generation project All new street light installations to be LED Community showcase: energy & sustainability retrofit of 20 orphanage homes 	<ol style="list-style-type: none"> Construction of inter-modal transport facilities Develop and encourage adherence to green building guidelines Implement climate risk-responsive spatial planning & development control 	<ol style="list-style-type: none"> Develop a feasibility study for a waste-to-energy and/or comprehensive waste avoidance project Implement and enforce the Biodiversity Open Space Management Plan

Cross-cutting & enabling Strategies				
Enabling strategies	Institutional Capacity	Partnerships	Integration, Monitoring & Evaluation	Regional enabling strategies*
	Fill identified skills gaps and up-skill existing municipal staff to effectively contribute to the implementation of this strategy	Promote a new culture of working together based on partnership between different tiers of government, business and community	Monitor & evaluate progress in delivery of the action plan; integrate into statutory documents & performance management systems & update institutional decision-making processes	These are those outside the direct control of the Municipality but action on these by neighbouring institutions would enable the low-emission transition in KwaDukuza to take place.

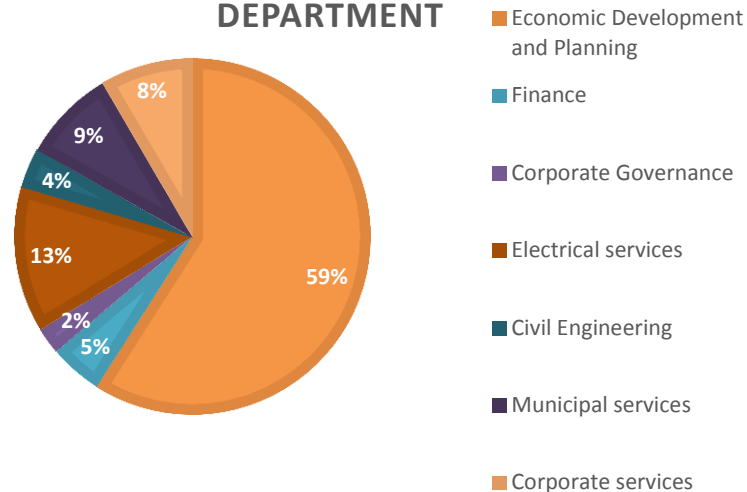
9. From strategy to implementation: action plan

The action plan below has been developed with the involvement of all relevant departments of the municipality. While much can be done by the municipality itself, the realisation of the 2030 vision will only be possible with actions undertaken independently by all sectors of society in KwaDukuza. For information on monitoring and evaluation systems to be put in place to monitor delivery, please see section 10.3

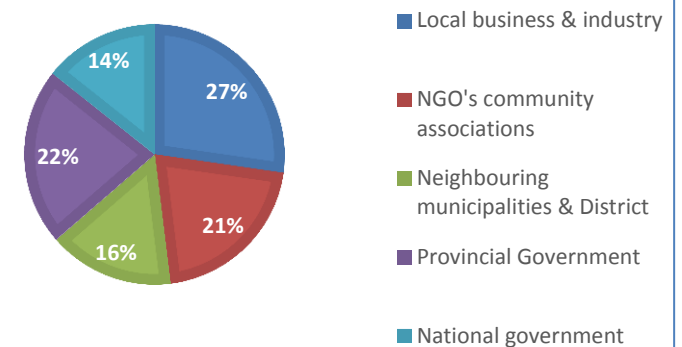
Analysis of actions

The actions in the subsequent table can be categorised in the following ways:

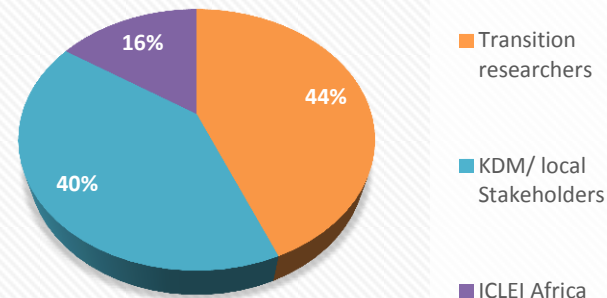
LEAD RESPONSIBILITY OF ACTIONS PER DEPARTMENT



ROLE OF EXTERNAL STAKEHOLDERS IN IMPLEMENTATION OF ACTIONS



SOURCE OF ACTION RECOMMENDATIONS



KwaDukuza Low Emission Development Action Plan (2015 – 2021)

Action colour code:

Policy/ Strategy/plan

Technical/infrastructure investment

Organisational/ governance

Education/ awareness raising

Assessment/research

Public participation/ stakeholder engagement /partnerships

Job creation scheme

Finance mechanism

Table 2 KwaDukuza Action Plan 2014 - 2021

Existing KDLM strategic Goal	Flagship low-emission strategies	Action	Priority 1- High, 2- Medium, 3- low	Timeframe (2015-2016, 2016-2021 or 2021-2030)	Municipal Responsibility (Key partners)	Costs/funding source/capacity requirements	KPI's (tbc through consultation)
Strategic Objective A: Position KwaDukuza as a green economic and tourism hub; underpinned by local skills and indigenous knowledge							
Promote inclusive local economic development which creates sustainable entrepreneurs , wealth and decent jobs,	1. Promote the diversification and greening of the local tourism industry	1.1 Work with a tourism industry organisation/the local Chamber of Commerce to encourage responsible tourism principles, including implementation of green building guidelines & low-carbon transport options in new and existing tourism developments <i>Action Source: Transition researchers</i>	1	2015 – 2016, ongoing	Economic Development and Planning (EDP) (Responsible Tourism, eThekweni Municipality, Provincial Government) (Sustainable Tourism Partnership Programme)	See 7.2 green building guidelines	% of members of Chamber of Commerce that have developed energy efficiency audits Baseline - 0 Target: 10
		1.2 Work with the Chamber of Commerce to incorporate low-emission development principles and actions into the urban improvement district. <i>Action Source: KDLM/stakeholders</i>	1	2016 – 2021	EDP: Local Economic Development (iLembe Chamber of Commerce)	No/low cost	Number of meetings held with Chamber of Commerce
		1.3 Explore a partnership with eThekweni to promote responsible tourism in the greater Durban area	2	2016 – 2021	EDP: Local Economic Development	Joint fundraising with eThekweni possible	Number of meetings held with eThekweni

			<i>Action Source: Transition researchers</i>			(eThekweni Municipality)		Municipality
		1.4	Engage with DEA about the possibilities of developing Working for Wetlands and Wildlife Economy EPWP projects in the municipality as start-up opportunities for ecotourism businesses in the municipality. <i>Action Source: Transition researchers</i>	2	2016 – 2021	EDP (DEA, Provincial Government, iLembe District)	Included in IDP 2015 – 2016	1.4.1 At least one active EPWP programme related to ecotourism by 2017
	2. Support the development of local green industries and green job creation	2.1	"Commission a feasibility study into the cost-benefits of developing a set of industrial qualifications/ incentives (rates/taxes) for industries seeking to enter the municipality that prefers low emissions development and industries." <i>Action Source: Transition researchers</i>	1	2016 – 2021	EDP/Finance (KZN Province: Green Economy team, TIKZN)	Source external funding. Potential: TIKZN fund	Number of feasibility studies completed: Baseline: 0 Target: 1
		2.2	Explore how concerns around the RedHub can be addressed to enable full support from the municipality for its success <i>Action Source: Transition researchers</i>	1	2016 - 2021	EDP (RedHub, TIKZN)	No cost	Number of engagements with the relevant response
		2.3	Continually implement a KwaDukzua marketing video dissemination plan which promotes the area as a green investment location <i>Action Source: KDLM/stakeholders</i>	1	2015 – 2016	EDP, Communications (Enterprise iLembe, iLembe Chamber of Commerce, Provincial Government)	No cost	Number of websites/articles/ newsletters/event s video disseminated at Baseline: 0 Target: 10
		2.4	Line departments to request resource efficient products and services in their tender processes wherever possible, demonstrating that they have investigated resource efficient options <i>Action Source: Transition researchers</i>	2	2015 – 2016	Finance (Supply Chain Management), Technical Services (Electricity), EDP (Housing) (City of Cape Town, ICLEI)	No/low cost	Amended supply chain management policy
Existing KDLM Develop	Flagship low-emission	#	Action	Priority (to be completed by	Timeframe (2015-2016, 2016-2021 or	Municipal Responsibility	Costs/funding source/ capacity	KPI's / measureable

ment Goal	strategies			departments)	2021-2030)	(Key partners)	requirements	outcomes
Strategic Objective B: To increase energy efficiency, promote renewable energy and enhance access to safe, reliable and affordable energy for all								
Improved universal access to basic services Promote environmental sustainability & protection of climate	3. Support initiatives in the sugar cane industry for the production of renewable energy	3.1	Ensure that transmission lines connecting sugar mill to the local grid are adequate for cogeneration of electricity by local sugar mills. <i>Action source: KDLM/Local stakeholders</i>	1	2016-2019	Technical Services: Electrical Engineering (Gledhow Sugar Mill, Tongaat Hullet, SASA)	R5 000 000	KM Line Upgraded
		3.2	Ensure appropriate zoning of land around the sugar mills to allow for development of complementary businesses to use cogenerated electricity <i>Action source: Transition researchers</i>	1	2015 - 2017	EDP: Development Planning	No/low cost	Review & council adoption of LUMS
		3.3	Support Gledhow Sugar Mill's application for renewable energy co-generation project <i>Action source: KDLM/Local stakeholders</i>	1	2015 - 2016	Corporate Governance: Special Project Electrical services (Gledhow Sugar Mill)	Department of Energy Private Sector	Agreement between Private sector and KwaDukuza Municipality
		3.4	Secure support to conduct an in-depth analysis about the legal options to enter an IPP agreement with the local sugar cane industry <i>Action source: Transition researchers</i>	3	2017 - 2021	Technical Services: Electrical Engineering	Cost unknown – External specialist to be appointed – Council/grant funding	Legal processes identified for entering into IPP with local sugar cane industry
		3.5	Engage with DEA over potential EPWP funding for a pilot under the Working for Energy	2	2016 – 2021	EDP: Environmental Management	No cost	Programme approval by

			programme for green cane harvesting <i>Action source: Transition researchers</i>			(Gledhow Sugar Mill, Tongaat Hullet, SASA,) Dept. of Economic Development, Tourism & Environmental Affairs (DEDTEA)		relevant parties
Improved universal access to community facilities	4. Reduce energy usage & explore options for renewable energy in municipal operations	4.1	Commission detailed municipal operations energy consumption baseline study <i>Action source: Transition researchers</i>	3	2017- 2021	Technical Services: Electrical engineering	Cost unknown – External specialist to be appointed – Council/grant funding	Energy baseline study completed
		4.2	Retrofit all municipal buildings with efficient lighting <i>Action source: KDLM/Local stakeholders</i>	2	2017 - 2020	Technical Services: Electrical engineering & Civil Engineering	R1.3 MILLION	Number of Municipal Buildings fitted with energy saving lights with daylight switches and sensors
		4.3	Develop an automated Energy Management System for municipal infrastructure and facilities <i>Action source: Transition researchers</i>	3	2017 - 2026	Technical Services: Electrical engineering	Cost unknown – External specialist to be appointed – Council/grant funding	Program established for introduction of an automated Energy Management System for municipal infrastructure and facilities
		4.4	Ensure roll-out of 100% LED/solar streetlights as proportion of total number of street lights installed <i>Action source: KDLM/Local stakeholders.</i>	1	2015 - 2030	Technical Services: Electrical engineering	Cost unknown – External specialist to be appointed – Council/grant funding	Number of LED /SOLAR Street Lights installed annually
		4.5	Apply for further EEDSM funding to enable	2	2015 - 2020	Technical Services:	Cost unknown –	Value of

			retrofits of municipal buildings, street lights and traffic lights <i>Action source: Transition researchers</i>			Electrical engineering	External specialist to be appointed – Council/grant funding	EEDSM grant funding secured
		4.6	Enforce new measures in supply chain management policy relating to improving the efficiency of the vehicle fleet <i>Action source Transition researchers</i>	3	2016 - 2021	Technical Services: Fleet Management	Cost unknown – External specialist to be appointed – Council/grant funding	Implement policy to procure fleet having low emission levels – reduce emissions tax
		4.7	Join the biogas platform <i>Action source: Transition researchers</i>	2	2021 - 2030	Municipal Services, Electrical Services (GIZ, Biogas Platform)	GIZ & Tongaat Hullet Development	Establishment of Forums
		4.8	Conduct pre-feasibility study of the potential of waste to energy options in partnership with SALGA biogas platform <i>Action source: Transition researchers</i>	1	2016 - 2021	Municipal Services (GIZ, SALGA, eThekweni)	GIZ & Tongaat Hullet Development	Completion of the pre-feasibility study
	5. Support & incentivise community efforts to introduce energy efficiency and renewable energy improvements	5.1	Review existing pilot hotbox roll-out and assess potential for local job-creating hotbox manufacturing and distribution scheme <i>Action source: KDLM/Local stakeholders.</i>	1	2015 – 2016	EDP (Local Community) ILembe Chamber of Commerce	Municipal budget & external funding	Feasibility Study on existing or new Co-Ops.
		5.2	Implement community showcase project to retrofit community run orphanages <i>Action source: KDLM/Local stakeholders.</i>	1	2015 - 2016	EDP (ICLEI – Africa)	ICLEI Africa funding through Urban-LEDS 350,000 ZAR	Number of orphanages retrofitted with energy & sustainability measures Baseline – 0 Target: 20

		5.3	Develop a household energy service package for new and existing low-income households <i>Action source: ICLEI Africa</i>	2	2016 - 2021	EDP: Human Settlements, Technical Services: Electrical engineering (SEA, local community)	Municipal budget	Approval of package by relevant parties
		5.4	Explore the use of off-grid solutions to supply electricity to rural communities <i>Action source: KDLM/Local stakeholders.</i>	3	2018 - 2030	Technical Services: Electrical engineering	Cost unknown – External specialist to be appointed – Council/grant funding	Implement off grid solutions where access to grid –terrain makes it viable
		5.5	Integrate contents of updated energy master plan into sectoral plans, especially focusing on energy efficiency and renewable energy <i>Action source: ICLEI Africa</i>	3	2015 – 2016	Technical Services: Electrical engineering	N/K yet until review is complete	xx
		5.6	Continue efforts to create an effective meter and billing system to ensure revenue collection is robust <i>Action source: Transition researchers</i>	xx	2015 - 2021	Finance	xx	xx
		5.7	Explore changes to the billing system to encourage the reduction of energy usage in residential and commercial sector <i>Action source: ICLEI Africa</i>	xx	2015 – 2016	Finance	xx	xx
		5.8	Develop specific program of community engagement & awareness & build into existing national/local environmental education opportunities <i>Action source: ICLEI Africa</i>	1	2015 - 2016	EDP: Environmental Management Technical Services Municipal Services	IDP Budget for community engagement activities On-going environmental ward forum meetings. Seek top-up additional external funding if required	Number of education & awareness programs created & implemented
		5.9	Create a flagship RE/EE education centre to sensitise the community and commercial sector to uptake new technologies and finance options available	2	2016 – 2021	EDP, Electrical services & Corporate Governance	ICLEI Municipal budget Private sector	Agreement between relevant stakeholders

			<i>Action source: ICLEI Africa</i>				Seek additional funding from Dept. of Energy	
		5.10	Create a partnership with the local private sector to encourage implementation of energy efficiency and renewable energy projects <i>Action source: Transition researchers</i>	1	2016 - 2021	Technical Services: Electrical engineering, EDP iLembe Chamber of Commerce	Private sector	Agreement between relevant stakeholders

Existing KDLM Development Goal	Flagship low-emission strategies	#	Action	Priority (to be completed by departments)	Timeframe (2015-2016, 2016-2021 or 2021-2030)	Municipal Responsibility (Key partners)	Costs/funding source/capacity requirements	KPI's / measurable outcomes
Strategic objective C: To promote a compact, resource and energy efficient built environment which enables sustainable mobility choices for all								
To ensure better land use management and compliance with various town planning and building	6. Implement priority public transportation and non-motorised transportation infrastructure	6.1	Ensure that all road upgrades, especially along public transport routes, include adequate space for cycle/pedestrian facilities, through inclusion in municipal road standards <i>Action source: KDLM/Local stakeholders</i>	1	2015 – 2016 2021 - 2030	Civil Engineering	R5 000.00 10 000.00	1. Identification of roads and prioritization for cycling/pedestrian facilities. 2. Kilometres

control legislation								of sidewalks to be upgraded to cycle/pedestrian facilities.
		6.2	Construction of inter-modal transport facilities <i>Action source: ICLEI Africa</i>	1	2016 - 2021	EDP: Development Planning (iLembe District, Provincial Government, neighbouring municipalities)	Municipal budget 2015 – 2016 Xx Department of Transport	Appointment of contractor
		6.3	Establish Integrated Transport Planning capacity within the municipal administration to champion the development of an integrated public and non-motorised transportation systems <i>Action source: Transition researchers</i>	1	2016 - 2021	Corporate Governance: Special Projects EDP: Development Planning Civil Engineering services (iLembe District, Provincial Government, neighbouring municipalities)	Municipal Budget	Approval of organogram to reflect the new personnel for Integrated Transport Planning
		6.4	Prepare locally focused KwaDukuza Integrated Transport Plan which specifically looks at opportunities for non-motorised transport <i>Action source: Transition researchers</i>	1	2016 - 2021	EDP: Development Planning (iLembe District, KZN Transport department, neighbouring municipalities)	Municipal budget	Adoption of policy and bylaws
		6.5	Create business plan for a school-based bicycle roll-out programme for learners <i>Action source: KDLM/Local stakeholders</i>	2	2016 - 2021	EDP KZN Department of Transport Department of Education Local Community/NGO's	Municipal budget	Completion of business plan
	7. Incentivise and enforce	7.1	Enforce existing SANS regulations for energy efficiency in buildings (through building plan	2	2016 - 2021	EDP: Building Control	Municipal budget	Number of compliance

	resource efficient & climate resilient human settlement patterns		approvals, collection of compliance certificates and random inspection checks) <i>Action source: ICLEI Africa</i>			(Local property developers, businesses & residents)		certificates Number of random checks completed
			Implementation of the Land Use Management Strategy (LUMS) <i>Action source: KDLM/Local stakeholders</i>	1	2016-2021	EDP: Development planning	Funded (Municipal budget)	Council resolution for LUMS
		7.2	Develop local green building guidelines for new and existing developments and incentivise compliance <i>Action source: KDLM/Local stakeholders</i>	2	2015 - 2016	EDP: Building Control (Local property developers, businesses & residents, ICLEI – Africa)	Funded (ICLEI Africa Urban-LEDS project)	% of development plans which meet a minimum proportion of the green building guidelines Baseline- 0 Target: Xx (tbd by green buildings team)
		7.3	Introduce a monitoring system to track compliance of development plans with the green building guidelines <i>Action source: ICLEI Africa</i>	1	2015 – 2016	EDP: Development planning	Funded (Municipal budget;	Implementation of plan & tracking system
		7.4	Review the SDF to ascertain alignment with the low carbon vision and objectives alongside SPULMA alignment <i>Action source: KDLM/Local stakeholders</i>	2	2016 - 2021	EDP: Development planning (KZN COGTA and DRDLR)	No budget yet allocated	Review & adoption of SDF
		7.5	Undertake a spatial climate / disaster / risk vulnerability assessment and determine appropriate set-back lines from locations at risk from natural disasters and climate change related risks	2	2015 - 2016	Municipal Services: Disaster Management	Funded; Municipal Budget 400,000 ZAR	AURECON has completed the assessment. Work in progress.

			<i>Action source: Transition researchers</i>					
		7.6	Integrate spatial vulnerability assessment outcomes and recommendations into strategic and local scale plans, development controls and by-laws. <i>Action source: KDLM/Local stakeholders</i>	2	2016 - 2021	EDP, Municipal Services: Disaster Management (iLembe District)	Municipal (No budget yet allocated)	
		7.7	Ensure beach node detailed area plans become a model of resilient infrastructure development – strongly linked to the coastal management strategy and LUMS <i>Action source: ICLEI Africa</i>	2	2016 – 2021	EDP, Municipal services, Civil Engineering services, & Electrical services	Municipal budget. Seek additional funding from COGTA, DRDLR, DEDTEA	Adoption of city development strategy

Existing KDLM Development Goal	Flagship low-emission strategies	#	Action	Priority (to be completed by department s)	Timeframe (2015-2016, 2016-2021 or 2021-2030)	Municipal Responsibility (Key partners)	Costs/funding source/ capacity requirements	KPI's / measureable outcomes
Strategic Objective D: To protect & enhance local natural assets, especially water supply and biodiversity, to support local well-being and develop climate resilience								
Promote environmental sustainability and protection of climate	8. Ensure responsible use of and rehabilitate local resources (soil, land, water, waste) in urban and rural areas	8.1	Engage the South African Sugar Association about the viability of introducing the use of vetiver grass on sugar plantations. <i>Action source: Transition researchers</i>	2	2016 - 2021	EDP: Environmental Management (SASSA, local sugar mills) Tongaath Hullet, Illovo Sugar DAFF	No cost	Number of meetings held
		8.2	Engage the Department of Environmental Affairs about opportunities in the Land Users Incentives Programme to encourage farmers to pilot vetiver grass or other crop sowing <i>Action source: Transition researchers</i>	2	2016 - 2021	EDP (DEA, Tongaath Hullet, other farmers) Illovo Sugar	No cost	Number of meetings held

		8.3	Investigate the creation of nurseries as an EPWP project to grow vetiver seedlings <i>Action source: Transition researchers</i>	2	2016 - 2021	Municipal services (DEA, Tongaat Hullet, other farmers) Illovo Sugar	Municipal budget Tongaat Hullet Dev Illovo Sugar	Baseline study/ investigation completed
		8.4	Investigate the feasibility of supporting community-run urban agriculture schemes <i>Action source: KDLM/Local stakeholders</i>	1	2016 - 2021	EDP DRDLR (ICLEI Africa)	DRDLR ICLEI	Report on feasibility study
		8.7	Implement paper recycling bin programme in municipal buildings <i>Action source: KDLM/Local stakeholders</i>	1	2015 – 2016	EDP: Environmental Management, Municipal Services, Corporate Services (ICLEI Africa)	Municipal Budget	Tonnes of paper collected for recycling Baseline – 0 Target - xx
		8.8	Continue with efforts to move to a paperless meeting management system <i>Action source: KDLM/Local stakeholders</i>	1	2015 - 2016	Corporate Services	Municipal budget	Number of employees receiving e- agendas
		8.9	Set-up waste buy-back and drop-off centres <i>Action source: KDLM/Local stakeholders</i>	2	2016 - 2021	Municipal Services (DCLM, SMME's, SALGA)	DEDTEA	Agreement between stakeholders
		8.10	Conduct feasibility and economic benefit analysis of introducing community recycling programmes <i>Action source: Transition researchers</i>	1	2016 – 2021	Municipal Services, EDP: Environmental Management	DEDTEA	Completion of feasibility study
	9. Protect biodiversity and raise the profile of ecosystem services in municipal planning	9.1	Implement and enforce the Biodiversity Open Space Management Plan (BOSMAP)					

		9.1.1	Establish learning exchange with eThekweni Municipality/MILE <i>Action source: Transition researchers</i>	1	2015 - 2016	EDP (eThekweni)	Municipal budget MILE	Number of learning exchange held
		9.1.2	Define targets for biodiversity and ecosystem protection in the municipal area. <i>Action source: KDLM/Local stakeholders</i>	2	2016 - 2021	EDP: Environmental Management, Municipal services	Municipal budget DEDTEA	Number of targets identified within municipal area
		9.1.3	Integrate BOSMaP into spatial development plan, sectoral plans, green building policies, and make publicly available. <i>Action source: KDLM/Local stakeholders</i>	1	2016 - 2021	EDP	Municipal budget COGTA DRDLR	Adoption of reviewed package of plans
		9.1.4	Build internal and external capacity on the BOSMAP (key landowners, NGOs, Environmental Assessment Practitioners, conservation agencies, other government departments). <i>Action source: KDLM/Local stakeholders</i>	2	2016 - 2021	EDP: Environmental Management	DEDTEA KZN Ezemvelo COGTA	Two (2) workshops a year for relevant officials & stakeholders
		9.1.5	Formally protect high value ecosystems e.g. coastal fore-dunes, forests. <i>Action source: KDLM/Local stakeholders</i>	2	2016 – 2021	EDP, Municipal services	DEDTEA	Adoption of reviewed LUMS to include Coastal Management Plan (CMP)
		9.1.6	Support and promote the establishment of industrial, business and community conservancies. <i>Action source: Transition researchers</i>	2	2016 – 2021	EDP (Local residents, businesses)	DEDTEA Private sector	Two (2) workshops a year for relevant officials & stakeholders
		9.1.7	Implement restoration of high value ecosystems (e.g. coastal grasslands). <i>Action source: KDLM/Local stakeholders</i>	2	2016 – 2021	EDP: Environmental Management	Private sector	Terms of Reference for conservation areas
		9.1.8	Develop enforcement criteria, including the enforcement of coastal buffers and other set-back lines, and implement. <i>Action source: KDLM/Local stakeholders</i>	2	2016 – 2021	EDP	No cost	Adoption of CMP
		9.2	Undertake an economic valuation of the ecosystem services in the municipal area AND Estimate the	2	2016 - 2030	EDP: Environmental	DEDTEA	Review & adoption

			numbers of users of critical ecosystem services using a human benefit index approach. <i>Action source: Transition researchers</i>			Management Municipal Services		of BOSMAP
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10. Making it happen: cross-cutting & enabling strategies

10.1 Institutional Capacity

Strategic Objective

Fill identified skills gaps and up-skill existing municipal staff to effectively contribute to the implementation of this strategy

Low emission development requires “business as un-unusual” development. For this, some new skills and capacities are required. KwaDukuza’s 2020 “tough choice scenarios” recognised the importance of developing excellent strategic capacity as one of two key tough choices the Municipality will have to take if a lower carbon 2030 is to be realised.

As a starting point for developing a full staff capacity building plan, a staff awareness questionnaire was conducted within the municipality in 2013 – the results can be found in the Annex Staff Awareness Questionnaire results report. A full staff skills assessment would be needed, which would then identify specific training courses that could assist existing staff to better integrate these priorities into service delivery and planning.

A number of concrete actions have been identified to enable the municipality to develop its strategic capacity appropriately. They are shown in the table below. They focus on two main areas:

- Hiring additional staff with relevant skills that are required
- Training existing staff to allow them to contribute effectively to the implementation of municipal objectives.

What is clear is the low emission development pathway covers all aspects of municipal development (transport, waste, spatial planning, electricity, housing, human resources etc) that there is a role for every department in the municipality. The table below highlights this as exemplified through strategic objective two (energy)

Table 3 Examples of role of Municipal departments in the energy transition

Municipal Function	Examples of Responsibilities with Respect to the Energy Transition
Municipal Manager	Overall responsibility for implementation of Low Emission Development Strategy (this applies to all the transition areas)
Chief Financial Officer	Ensure that budget is made available to support implementation of Low Emission Development Strategy (this applies to all the transition areas)
Executive Director: Economic Development and Planning Director: Human Settlement	Development of Sustainable Residential Housing Policy
Executive Director: Corporate Governance Director: Corporate Communications Director: IDP and Public Participation Director: Special Projects Director: Performance Management	Maintain relationships with key stakeholders who can support the municipality in achieving its Low Emission Development vision Ensure that LED is incorporated into IDP Coordination and monitoring of LED actions Incorporation of LED strategy into PMS
Executive Director: Technical Services Director: Electrical Engineering Services Director: Civil Engineering Services	Establish a coherent basic energy audit of public infrastructure and the related energy consumption Make use of the planned upgrades of the municipality's waste and energy providing facilities to introduce waste to energy projects

Table 4 Cross-cutting & Enabling Strategies: Municipal Capacity

Existing KDL M Development Goal	Flagship low-emission strategies	#	Action	Priority (to be completed by departments)	Timeframe (2015-2016, 2016-2021 or 2021-2030)	Municipal Responsibility (Key partners)	Costs/funding source/ capacity requirements	KPI's / measureable outcomes
Cross-cutting & Enabling Strategies								
Enhance the institutional transformation and productivity through strategic administrative IT and Human Capital Support	10. Capacitate and up-skill municipal staff/departments and update institutional decision-making processes	10.1	Facilitate trainings related to low emission programmes/ principles <i>Action source: KDLM</i>	1	2015 - 2021	EDP, Corporate Services: Human Resources	Municipal budget	Number of training sessions conducted
		10.2	Appoint waste manager <i>Action source: KDLM/Local stakeholders</i>	1	2015 - 2016	EDP, Corporate Services :Human Resources	Municipal budget	Name of incumbent appointed
		10.3	Develop staff training & capacity building plan on climate change (based on KDM skills assessment report) <i>Action source: KDLM/Local stakeholders</i>	1	2016 - 2021	EDP, Corporate Services: Human Resources	Municipal budget	KDM staff training & capacity building plan on climate change approved by council
		10.4	Include information/training on the municipality's cross-cutting low-emission development priorities during the new staff induction process <i>Action source: ICLEI Africa</i>	2	2015 - 2021	EDP, Corporate Services :Human Resources	Municipal budget	Number of staff inductions including LED priorities/information Baseline – 0 Target (2016): 4 per year
		10.5	Develop municipal decision-making tool to incorporate low-carbon and climate resilient principles into the implementation of council decisions <i>Action source: KDLM/Local stakeholders</i>	1	2015 - 2016	Corporate Services	Municipal budget	The quarterly KDM resolutions register submitted to council
		10.6	Conduct KDM skills assessment on climate change <i>Action source: KDLM/Local stakeholders</i>	1	2015 - 2016	EDP, Corporate Services	Municipal budget	KDM skills staff assessment report approved by council

		10.7	Develop the user friendly manual on KDM Low Emission strategy & priorities for staff induction <i>Action source: KDLM</i>	2	2016 - 2021	EDP, Corporate Services	Municipal budget	A user friendly manual on KDM Low Emission strategy & priorities for staff induction approved by council
		10.8	Circulate all council agenda /minutes to KDM management in line with low emission principles <i>Action source: KDLM</i>	1	2015 - 2016	Corporate Services	Municipal budget	Number of KDM council/ EXCO agenda circulated electronically per quarter
		10.9	Conduct KDM council meetings in line with low emission principles <i>Action source: KDLM</i>	2	2016 - 2017	Corporate Services, All departments	Municipal budget	Number of KDM council/ EXCO agenda circulated electronically per quarter
		10.10	Develop the electronic job application system <i>Action source: KDLM</i>	2	2016 - 2021	Corporate Services	Municipal budget	The council decision on the introduction of KDM electronic job application

10.2 Partnerships

Strategic Objective

Promote a new culture of working together based on partnership between different tiers of government, business and community

The low-emission development transition in KwaDukuza is everyone's business. The way in which this strategy was developed, involving a cross-section of local stakeholders in the planning process, recognises the important role of Municipal partnerships to realise its success. While many of the actions in this action plan are the lead responsibility of the municipality, their success depends on the partnerships that are created between different players in the local area. The table below highlights three key partnership actions.

Table 5 Cross-cutting & Enabling Strategies: Partnerships

Existing KDLM Development Goal	Flagship low-emission strategies	#	Action	Timeframe (2015-2016, 2016-2021 or 2021-2030)	Partners
Cross-cutting & Enabling Strategies					
Building a caring and sustainable local government that is responsive to the needs of the communities	11. Promote a new culture of working together based on partnership between different tiers of government, business and community	11.1	Actively develop working relationships / partnerships with District Municipality and adjacent municipalities, provincial government, national government, and strategic initiatives (e.g. Dube Tradeport, Aerotropolis) to foster planning 'beyond boundaries'. Use existing committees and platforms for this where possible but re-vamp/re-launch <i>Action source: Transition researchers</i>	2015 - 2030	All departments and all local stakeholders
		11.2	Work with the Chamber of Commerce to devise a local corporate social responsibility fund with proportion of proceeds dedicated to funding low emission development actions <i>Action source: KDLM/Local stakeholders</i>	2015 – 2016	EDP & Chamber of Commerce
		11.3	Engage in the KZNCCC & set-up specific learning exchange/joint planning processes with eThekweni Municipality, specifically on EMS, BosMAP implementation, waste to energy, responsible tourism & IPP arrangements <i>Action source: KDLM/Local stakeholders</i>	2015 – 2021	EDP, eThekweni Municipality

Regional enabling strategies point to actions by local partners and tiers of government that would enable and unlock low-emission development in KwaDukuza but which are not necessarily under the influence or control of the Municipality.

Table 6 Regional Enabling Strategies

Flagship low-emission strategies	#	Action	Timeframe (2015-2016, 2016-2021 or 2021-2030)	Partner
Regional Enabling Strategies				
Support & incentivise community efforts to introduce energy efficiency and renewable energy improvements	13.1	Integration of low-carbon issues into school curriculum	2015 - 2025	Department Of Basic Education
	13.2	Strengthening the regional green economic skills base in collaboration with local University and higher education institutes	2015 - 2025	KZN Provincial Government
	13.3	Energy audit and energy efficiency/renewable energy measures installed in the District water infrastructure system (including waste water treatment works and pump stations), or water partnership model between municipalities and businesses explored ³	2016 - 2021	iLembe District Municipality
	13.4	Participation of local businesses in the KZN Provincial Industrial Symbiosis programme	2015 - 2016	KZN Provincial Government (Green Economy)
	13.5	Legislation review to allow independent electricity supply to the municipalities and private industrial clients.	2016 - 2021	National Department of Energy
	13.6	Programme to shift freight transport from road to rail Freight related carbon emissions will therefore continue to escalate in the municipal area in direct relation to economic growth. This reality will likely be reflected in an increasing transport sector emissions profile in the municipal Greenhouse Gas Inventory, and can only be addressed at a regional scale through the shifting of freight from road to rail. This lies outside the mandate of the municipality to address on its own.	2016 – 2030	PRASA
	13.7	Fleet upgrade of trains	2016 - 2025	PRASA

³ See case study from Emfuleni [here](#)

The table below summarises highlights the actions where a local partner has a particularly important role to play for success of that action. This can read as a guide for the involvement of local stakeholders in the implementation of this strategy; though it may not be exhaustive.

Table 7 The role of partners in each action

Partner involvement	Strategic area (actions always contribute to more than one)				
	Economic	Energy	Spatial	Ecological	Cross-cutting
Local businesses & industry (incl associations)	1.1, 1.2, 1.3, 2.1, 2.2, 2.3	3.1, 3.5, 4.8, 5.9, 5.10,	7.1, 7.2	8.1, 8.2, 8.3, 8.9 9.1.4, 9.1.6	11.1, 11.2,
NGO's, community associations, local residents	2.3	3.5, 5.1, 5.3, 5.8, 5.9	6.5 7.1, 7.2	8.2, 8.3, 8.4, 8.9 9.1.4, 9.1.6	11.1
Neighbouring municipalities & District	1.3, 1.4	4.8, 13.5,	6.3, 6.4 7.6	9.1.1 9.1.4	11.1, 11.3 13.3
Provincial government	1.1, 1.4 2.1, 2.3	5.8,	6.1, 6.2, 6.3, 6.4	8.2, 8.3, 8.9 9.1.4	11.1 13.1, 13.4, 13.6
National Government	1.4	3.1, 3.3, 3.5 4.5		8.2, 8.3	11.1 13.1, 13.5, 13.6

10.3 Integration, Monitoring and Evaluation

Strategic Objective

Monitor & evaluate progress in delivery of the action plan; integrate into statutory documents & performance management systems & update institutional decision-making processes

Integration

The municipality recognises that the true value of this strategic framework and action plan lies in its integration into the legal development strategies and documents of the municipality. This process of integration has already begun. Three key documents have been identified in order to mainstream the lower emission development principles in this framework to the development objectives of the municipality:

- **Integrated Development Plan 2015 – 2016:** Short-term actions that can be started in the first year of this action plan have been identified by each department and integrated into the IDP annual review process. Key lower emission development principles and objectives, as well as supplementary information such as climate vulnerability and greenhouse gas emissions data, have also been incorporated.
- **Integrated Development Plan 2016 – 2021:** Many of the actions in the action plan run throughout the period of the next 5 year IDP. The IDP development process will need to take note of the actions in this framework and ensure appropriate budget is allocated to make them a reality.
- **Spatial Development Framework:** The overall spatial planning principles in the SDF are broadly in line with lower emission development, however the set of guiding policies and plans underneath the SDF (such as area plans, urban improvement districts etc) need to be reviewed to fully incorporate the aims of the low emission spatial transition.
- **City Development Strategy:** The underlying transition drivers of this strategy have already been incorporated into the Terms of Reference and underlying strategic thrust of the CDS – the development of which has started in 2015. The CDS has a 30 year time horizon and therefore the long-term development direction that the CDS promotes must fit with the long-term development direction of this framework. This will include but not be limited to setting targets, objectives and urban management mechanisms for: urban densification, coastal development, urban regeneration (including identification of brownfields development opportunities), and the prioritisation of social amenities and commercial service centres in areas where travel distances to these facilities are currently high.

Monitoring & Evaluation

DEA's national Climate Change Monitoring and Evaluation System proposes a tiered set of indicators. To encourage vertical alignment the tiered system has been adopted in KwaDukuza.

Table 8 Indicators to track progress

Tier 1: Overall progress towards a lower carbon future			
Strategic area	Indicator	Specific target (date)	Baseline (Date)
All	Total GHG emissions and per capita	Target (aspirational): 42% reduction in community-wide CO ₂ emissions relative to a "business as usual" ⁴ growth projection. Target equates to 1 048 853 tonnes CO ₂ -equivalent reduction (2030).	Projected "business-as-usual" emissions: 1 808 367 tonnes CO ₂ -equivalent (2030 projected)
Tier 2: Outcome indicators related to emissions drivers			
Economic	Carbon emissions (tCO ₂ -eq) per unit of Economic GVA (Gross Value Added)	None set	130.1 tCO ₂ -eq/ per unit of GVA (2012)
Energy	Households using electricity for lighting (% of total)	Target: 100% (2025)	Baseline: 90.2% (2011)
	Municipal energy consumption (GJ)	8 % reduction (48 173 by 2018).	51 645 Giga Joules (GJ) (2012)
	LED streetlights (% of total)	None set	No data yet available*
	Proportion of renewables to total primary electricity supply (%)	None set	No data yet available*
	Community electricity consumption (GJ) (excluding municipal operations)	None set	2 247 378
Spatial	Change in modal split between private & public transport use	None set	No data yet available*
	Change in average residential density per square kilometre, within & without the urban edge (Dwelling units per hectare)	None set	No data yet available*
Ecological	Change in hectares of ecological infrastructure under	None set	No data yet available*

⁴ The "business-as-usual" projection to 2030 was calculated using 2012 base year emissions of 1 008 402 tonnes CO₂-equivalent as per the inventory, and assumed rates of sectoral GVA growth and household growth rates. The BAU is based on the scenario of "no actions taken to mitigate GHG emissions".

	conservancy/stewardship, as a % of the total		
Tier 3: Specific indicators for individual actions <i>Can be found in action plan table</i>			

**In some cases, data to track these indicators is not currently available to the municipality. When it becomes available, a target could be considered*

In order to track progress and to ensure the integration into strategy described above can take place, a number of institutional mechanisms are required for reporting and monitoring of success. These are listed in the table on the next page. Particular highlights of the institutional process that will contribute to M&E include:

- Green House gas inventory updates are planned every two years; with increasing capacity to conduct these internally planned.
- The Lead Department for the strategy will be Economic Development and Planning, under the direct leadership of the Executive Director. Each department will be responsible for reporting on progress on actions falling within their responsibility. A quarterly and annual report will be compiled to show progress to Council and local stakeholders respectively.
- A new quarterly forum is envisaged for this purpose – either a re-purposed Development Review Committee, or a separate entity. This will provide the forum in which departments can collaborate to ensure the actions in this action plan are being implemented and reported on. The minutes of these meetings will be submitted to Council. Ideally, this internal team grows over time. It would need to evolve to play a number of different roles:
 - Planning and evaluation (EDP, PMS)
 - Capacity building (EDP, HR)
 - Intergovernmental & business relations (EDP, Corporate Governance)

Table 9 Cross-cutting & enabling strategies: Monitoring & Evaluation

	Flagship low-emission strategies	#	Actions	Priority (to be completed by departments)	Timeframe (2015-2016, 2016-2021 or 2021-2030)	Municipal Responsibility (Key partners)	Costs/funding source/ capacity requirements	KPI's / measureable outcomes
Cross-cutting & Enabling Strategies								
	12. Monitor & evaluate progress in delivery of the framework and action plan & integrate into performance management systems	12.1	Update the DRC/create new formal sub-committee to act as a steering committee for the monitoring & evaluation of the implementation of the framework and action plan Action source: ICLEI Africa	1	2015 – 2016	EDP	No cost	# of meetings of committee Baseline – 0 Target: 4 per year
		12.2	Update Green House Gas inventory annually, capacitating staff to gradually complete the process in-house overtime Action source: KDLM/Local stakeholders	2	2015 – 2016	EDP	Municipal budget	Number of staff capacitated
		12.3	Integrate measures in the action plan to the Performance Management System Action source: KDLM/Local stakeholders	1	2015 – 2016	All departments	No-cost	% of actions in action plan appearing in PMS 2015 – 2016: xx 2016 – 2017: xx
		12.4	Inclusion of this plan into sector plans and municipal monitoring systems, specifically; IDP, KPI's, SDBIP's and electricity master plan Action source: KDLM/Local stakeholders	1	2015 - 2021	All departments	No cost	xx

		12.5	Submit quarterly report to MANCO and EDP Portfolio Committee on progress made in reaching objectives of this plan <i>Action source: KDLM/Local stakeholders</i>	1	2015 – 2016	EDP, All departments	No cost	Number of quarterly reports Baseline – 0 Target - 4
		12.6	Submit annual updates of progress on this plan alongside the IDP annual review process, & present them to stakeholders <i>Action source: KDLM/Local stakeholders</i>	1	2015 – 2021	EDP, All departments	No cost	Number of annual reports Baseline – 0 Target - 5
		12.7	Report an annual update of activities to the carbonn Climate Registry (cCR) <i>Action source: ICLEI Africa</i>	1	2015 – 2021	EDP, All departments	No cost	Number of cCR updates Baseline – 1 Target - 6

11. Appendices

Supporting documentation is available separate to this document relating to the strategy and its development process. Publicly available documents are hyperlinked. Others can be requested.

For general resources that support municipalities and local stakeholders to undertake actions towards low emission development, visit the resource library at

www.cityenergy.org.za

[KwaDukuza GreenHouse Gas Inventory \(2012\) + Infographic](#)

KwaDukuza Staff Awareness Questionnaire report

[Climate Change Response Strategy \(2012\)](#)

[Integrated Development Plan 2014-15](#)

Transition researcher reports:

Futureworks (2014) Specialist Paper on the Ecological Transition towards a Low Emissions City in KwaDukuza Local Municipality

Futureworks (2014) Specialist Paper on the Spatial Transition towards a Low Emissions City in KwaDukuza Local Municipality

Palmer Development Group (2014) Specialist Paper on the Economic Transition towards a Low Carbon City in KwaDukuza Local Municipality

Adelheid Rehmann & Linda Manyuchi (2015), Specialist Paper on the Energy Transition towards a Low Emissions City in KwaDukuza Local Municipality

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