

The role of local government in the regulation of climate change mitigation *via* energy sector reform in South Africa

Mini-dissertation accepted in partial fulfilment of the requirements for the
degree *Master of Laws* in *Environmental Law and Governance* at the
North-West University

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Graduation: October 2023

ACKNOWLEDGEMENTS

Firstly, I would like to say thank you Almighty for instilling strength and hope in my life where I nearly gave up in this journey of study.

I would like to express my sincere gratitude to my study supervisor Prof Michelle Barnard for the continued support and encouragement throughout the study. Her patience, tolerance, motivation support, and guidance contributed towards my Masters studies. I cannot imagine the completion of this study without her heart support.

I also wish to thank my family, particularly my husband Lionel for taking care of my two boys (Tau and Phaphedi) when I struggled to get my research right. Finally, I would also like to thank my siblings and my mother for the continued support during my studies.

ABSTRACT

South Africa's high levels of GHG emissions can be traced to Eskom's fossil-fuel powered electricity provision that are localised within cities. Given this, one would have thought that cities (through local government) have a heightened role to play in the mitigation of climate change as well as the diversification of energy from its coal-centred base to, for example, renewable energy. Careful examination of the matter however soon shows that this is not the case, because Eskom holds the state monopoly over electricity generation. As such, Within their localised spaces, cities have to find ways to regulate climate-change mitigation by means of energy-sector reform. The present project study focuses on the City of Johannesburg and the City of Cape Town to draw attention to the manner in which cities are regulating this and how they are playing their role of reforming the energy sector only to a limited extent.

Keywords: climate mitigation; energy reform; renewable energy; local government; City of Cape Town; City of Johannesburg.

LIST OF ABBREVIATIONS AND ACCRONYMS

CCT	City of Cape Town
COJ	City of Johannesburg
DMRE	Department of Mineral Resources and Energy
IEP	Integrated energy plan
IDPs	Integrated development plans
IPPs	Independent power producers
IRP	Integrated resources plan
IUDF	Integrated urban development framework
NERSA	National Energy Regulator of South Africa
REIPPP	Renewable energy independent power producer programme
RMIPPPP	Risk mitigation IPP procurement programme
SDGs	Sustainable development goals
SEA	Sustainable Energy Africa

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1.1 Problem statement

1.1.1 Background

An inescapable reality is that, in developing countries, many priorities are to be undertaken by government, not least of which is poverty reduction.¹ This potentially makes climate-change mitigation sound luxurious in some way or another, and perhaps it concern about it may seem to be detached from day to day realities. However, climate-change mitigation should be considered for its potential long-term benefits, which should and must outlive present generations. In this respect, the role of the energy sector is crucial. Energy is significant, because societies use it on a daily basis for the purposes of sustaining life in various ways.² For example, in 2018, it was reported that electricity contributed most to GHG emissions.³ At the same time, South Africa stands as the greatest emitter of GHG in the southern African region since it generates electricity through coal.⁴ Large cities in the South African land space rely primarily on electricity for their energy sources.⁵ Despite this, it seems issues of climate mitigation and energy reform are not understood by most energy consumers within such large cities. Fudge and Peters describe the complexity of the matter:

With climate change and carbon reduction the problem – particularly from an ‘energy consumer’ perspective – is much less tangible. Electricity and gas, for example, are invisible. The utility that they provide (through central heating and enabling household appliances to function for example) in relation to the associated carbon dioxide emissions that this causes is, understandably, a less straightforward concept to grapple with than the physical issue of packaging discarded from bought products.⁶

¹ Cartwright *et al* "Climate at the city scale: the Cape Town Climate Think Tank" 3.

² Reddy *et al* *The Local Government Climate Change Support Programme in South Africa: Real Practice in Collaborative Climate Action* 7; Barnard 2014 *Journal of Energy in Southern Africa* 27.

³ IEA *Global Energy and CO2 Status Report: 2018* 8.

⁴ Barnard 2014 *Journal of Energy in Southern Africa* 27; Reddy *et al* *The Local Government Climate Change Support Programme in South Africa: Real Practice in Collaborative Climate Action* 7. South Africa is also the 14th largest emitter of GHGs.

⁵ Reddy *et al* *The Local Government Climate Change Support Programme in South Africa: Real Practice in Collaborative Climate Action* 7; PMG 2020 <https://pmg.org.za/page/Urbanisation>.

⁶ Fudge and Peters 2009 *Journal of Integrative Environmental Sciences* 118.

It is precisely because of this complexity that the present project investigates the role of local government⁷ in climate mitigation by means of energy-sector reform within South African cities.

1.1.2 Linking local government and climate-change mitigation in South Africa

In the past, South Africa's economy was centralised in terms of supply, which was aimed at supporting the mineral-energy complex, while coal was the main source of energy.⁸ Local government had a limited role to play in this set-up.⁹ In recent times, however, South African local government has been perceived to be well equipped to govern, given its close proximity to people, the increased numbers of people living in cities and the growing numbers of urban networks, which indicate a recognition of the independent nature and powers of cities in economic, political and ecological discussions.¹⁰ In South Africa, local government has unique powers that can be traced to the *Constitution of the Republic of South Africa*¹¹ (the Constitution).¹² It provides for distinct levels of government on national, provincial and local levels.¹³ These levels are distinctive, interdependent and interrelated.¹⁴ For this reason, the Constitution specifically recognises that local government has an important role to play in general and particularly in terms of issues implicating sustainable development and the pursuit of environmental rights, as established in section 24.¹⁵ Fuo says that this "arguably makes environmental protection a core mandate of local government".¹⁶

Climate mitigation is a form of environmental protection, and it involves processes of intervening by means of human efforts in order to lessen emissions from sources that directly or indirectly contribute to climate change.¹⁷ In other words, "mitigation involves

⁷ Local government is used loosely to describe various levels municipalities as described under section 1.1.3 below.

⁸ Borchers, Euston-Brown and Mahomed "Energy Planning in South African cities" 563.

⁹ Fuo 2015 *Commonwealth Journal of Local Governance* 20.

¹⁰ Pasquini *et al* 2015 *Climate and Development* 60; Cartwright *et al* "Climate at the city scale: the Cape Town Climate Think Tank" 1.

¹¹ *Constitution of the Republic of South Africa* 1996.

¹² du Plessis and Fuo 2017 *Commonwealth Journal of Local Governance* 72.

¹³ Section 40(1) of the *Constitution of the Republic of South Africa*.

¹⁴ Section 40(1) of the *Constitution of the Republic of South Africa*.

¹⁵ Fuo 2015 *Commonwealth Journal of Local Governance* 33.

¹⁶ Fuo 2015 *Commonwealth Journal of Local Governance* 18.

¹⁷ Barnard 2014 *Journal of Energy in Southern Africa* 29.

minimising greenhouse emissions in the atmosphere, for example by using alternative sources of energy like wind or solar energy instead of dirty coal energy that pollutes the environment".¹⁸ When it comes to responding to climate change through mitigation efforts, local government consequently has to accept the complexities involved, particularly with a view to the energy sector. For example, it has been said that, "at the city scale, climate change impacts have their origins in complex social and institutional structures, and appropriate responses demand an inter-disciplinary response and a knowledge agenda that can lead to implementation".¹⁹ As will be shown below, this is primarily the reason for the creation of local government integrated development plans (hereafter IDPs), which must be appropriately grounded in more than just "legalese", that is, the sometimes inaccessible jargon used in the legal sphere. It must involve firm projects and programmes that will facilitate exact ways of pursuing, among others, energy transformation (for example, diversifying energy from coal to renewables). This is not far-fetched. In countries such as Denmark, local government engages in what are termed "local climate action plans",²⁰ which are part of the overall development plans of the country. In South Africa, local government could establish similar plans, for example in terms of municipal planning, which is already inextricably linked to environmental issues and also offers a tool to be used to pursue environmental objectives like climate mitigation and energy-sector reform.²¹ Fudge and Peters rightly conclude that local government is now a major player in climate mitigation because of its involvement as an employer (civil servants), purchaser of goods and a provider of services (for example, electricity distribution), all of which must be planned for.²²

Municipal planning is described as the capacity of local government to plan for land development and management within its jurisdiction.²³ These powers can be derived from

¹⁸ Rungwe *South African renewable energy law and the mitigation of climate change* 2. Du Plessis and Kotzé 2014 *Journal of african law* 152 say that "the primary objective of mitigation is to limit the increase in atmospheric greenhouse gas concentrations, thereby reducing the extent of human-induced climate change."

¹⁹ Cartwright *et al* "Climate at the city scale: the Cape Town Climate Think Tank" 2.

²⁰ Fudge and Peters 2009 *Journal of Integrative Environmental Sciences* 104; Damsø, Kjær and Christensen 2016 *Energy Policy* 74.

²¹ Section 156(1-2) specifically notes that local government has executive authority over "the local government matters listed in Part B of Schedule 4 and Part B of Schedule 5" and that "a municipality may make and administer by-laws for the effective administration of the matters which it has the right to administer."

²² Fudge and Peters 2009 *Journal of Integrative Environmental Sciences* 105.

²³ Van der Berg *Municipal Planning Law and Policy for Sustainable Cities in South Africa* 113.

section 156 of the Constitution read with schedule 4B. Schedule 4B, for example, contains areas over which local governments have legislative competence and, among these, one finds electricity and gas reticulation.²⁴ As will be shown in chapter 2, there are a number of applicable laws that link climate mitigation in relation to local government and energy transformation in South Africa.

1.1.3 City level case studies

It is estimated that the majority of South Africa's population (63 %) now live in urban areas, while projections are that, by 2050, cities it would have increased to 71%.²⁵ However, a particularly pernicious situation is that experts in climate-change mitigation efforts and local government officials (who govern the majority of these people) have not always worked in harmony. The charge is that officials focus on day to day realities without necessarily engaging complexities (like climate change mitigation), while experts are "prone to a lack of appreciation for the processes that see knowledge turned into policies, programmes and actions".²⁶ Regardless, what is true and clear is that they need to work together, and the cities are the centrepieces of that which holds many countries in providing sustained services to the citizenry.

As noted, South African governance consists of three spheres: national, provincial and local. The local government sphere comprises of 278 municipalities²⁷ and is representative of the new democratic dispensation. These municipalities are further divided into eight metropolitan (category A), 44 district (category B) and 226 local (category C) ones.²⁸ Of these, the study will focus on two municipalities from the largest provinces in the country (in so far as population and economy is concerned): the City of Johannesburg (COJ) and the City of Cape Town (CCT), as found in Gauteng and the Western Cape respectively. Indeed, while no single city acting on its own could ever claim to hold solutions to or to

²⁴ It is important to note that the Integrated Resource Plan which was approved in 2019 notes that by 2030, there will be clusters of energy sources, including nuclear, solar, hydro, wind, gas etc. Fontana, Khumalo and Dladla 2021 <https://thelawreviews.co.uk/title/the-renewable-energy-law-review/south-africa>.

²⁵ PMG 2020 <https://pmg.org.za/page/Urbanisation>. Barnard also rightly says that with increased population, there will also be a simultaneous increase in energy demands, Barnard 2014 *Journal of Energy in Southern Africa* 29.

²⁶ Cartwright *et al* "Climate at the city scale: the Cape Town Climate Think Tank" 2.

²⁷ SAGOV date unknown <https://www.gov.za/about-government/government-system/local-government>.

²⁸ SAGOV date unknown <https://www.gov.za/about-government/government-system/local-government>.

effectively handle climate-change mitigation,²⁹ the totality of local government action could make an identifiable footprint in efforts to mitigate against climate change.

1.1.4 Motivation

Mokwena observes that "cities are key sites through which to assess and analyse the country's capacity to respond, adapt to, and mitigate the effects of climate change and related environmental problems in an integrated manner that is consistent with the other priorities to deliver basic services".³⁰ Furthermore, of the total energy related GHG emissions in cities, one third is emitted by residential and commercial buildings, all of which rely in large part on Eskom's fossil-fuelled power.³¹ In view of this, and considering that most of such residential and commercial spaces fall within municipal demarcations, local government should be an agent of social change, including energy reform.³² In a time when the goal of tackling climate change is clear and where the methods and processes remain contested,³³ local government could serve as a focal point to planning processes for seeking greater and more sustainable pathways (in this case, energy sector diversification to renewables) to climate-change mitigation. Indeed, having local government in the regulatory space facilitates a bottom-up approach to service delivery, in that the level of government closest to citizens becomes increasingly involved in climate-change mitigation.³⁴ This is why some scholars say that

projects which can be 'embedded' within bottom-up social, cultural, and economic particularities hold the potential to be more effective than top-down solutions in enabling individuals to recognize their own role in contributing to more sustainable levels of energy consumption and also in encouraging citizens to engage more fully in the wider political debate on sustainable living.³⁵

Local government thus plays a catalyst function given its ability to link top-down and bottom-up approaches to climate-change mitigation, while involving the common

²⁹ Cartwright *et al* "Climate at the city scale: the Cape Town Climate Think Tank" 2.

³⁰ Mokwena *Municipal responses to climate change in South Africa: the case of eThekweni, the City of Cape Town, and the City of Johannesburg* 2; Du Plessis and Kotzé 2014 *Journal of african law* 147 state that "because of its localized effects, local government has a prominent role to play in the domestic response to climate change."

³¹ SEA *Aiming for Zero-Carbon New Buildings in South African metros* 1.

³² Fudge and Peters 2009 *Journal of Integrative Environmental Sciences* 104; Pasquini *et al* 2015 *Climate and Development* 60.

³³ Cartwright *et al* "Climate at the city scale: the Cape Town Climate Think Tank" 1.

³⁴ Damsø, Kjær and Christensen 2016 *Energy Policy* 74.

³⁵ Fudge and Peters 2009 *Journal of Integrative Environmental Sciences* 104.

person.³⁶ Yet, even international frameworks accept the role of local government. For example, the famous Agenda 21³⁷ sets the tone for a firmer role of local government in climate-change mitigation. It states that, "because so many of the problems and solutions being addressed by Agenda 21 have their roots in local activities, the participation and cooperation of local authorities will be a determining factor in fulfilling its objectives".³⁸ Indeed, cities, especially in developing countries, are termed to be fluid "places of flux and opportunity".³⁹ Consequently, there a potential tension exists between climate change responses and the need for mainstream developmental goals. Yet this tension presents opportunities for sustainable pathways which could be streamlined through local government.⁴⁰ In the end, to win the battle of the climate change crisis caused by the use of fossil fuels, local government needs to address energy-efficient initiatives and promote the development of energy-efficient alternatives by transforming the energy sector through low carbon emitting energy sources such as wind energy, solar energy, geothermal energy and bio-fuels.

It is therefore necessary to examine the role of local government in the regulation of climate mitigation by means of energy-sector reform in South Africa.

1.2 Research question

How could local governance contribute to the regulation of climate-change mitigation by means of energy-sector reform?

³⁶ Fudge and Peters 2009 *Journal of Integrative Environmental Sciences* 105.

³⁷ *Earth Summit Agenda 21 – The United Nations Programme of Action from Rio*. United Nations Publication no E93I11 (1992).

³⁸ *Earth Summit Agenda 21 – The United Nations Programme of Action from Rio*. United Nations Publication no E93I11 (1992), para 28.1.

³⁹ Cartwright *et al* "Climate at the city scale: the Cape Town Climate Think Tank" 2.

⁴⁰ One needs to be cautious about the capacity of local government, as some have expressed concern on just how much can be achieved by local government. For example, Mokwena said that: "local authorities are the ineffective primary institutions for implementing government policies responses to the challenges of climate change and environmental conservation", Mokwena *Municipal responses to climate change in South Africa: the case of eThekwin, the City of Cape Town, and the City of Johannesburg* 9.

1.3 Research aim and objectives

The main aim of this research is to investigate the ways in which local governance could contribute to climate mitigation through means of energy-sector reform.

Three objectives, each as aligned with a given chapter of the present project, will guide the study:

- i. To evaluate the links between climate mitigation, local government and energy-sector reform.
- ii. To review the laws and policies of the COJ and the CCT in order to determine if they are engaged in efforts to mitigate climate change through energy-sector reform.
- iii. To offer some recommendations on how local government could best leverage their powers and opportunities presented by law in responding to climate change and towards transforming the energy sector.

1.4 Research method and limitations

The study was completed on the basis of a qualitative desktop review focused on primary and secondary sources that engage climate mitigation, local government and energy. The study analyses primary and secondary sources on climate-change mitigation and energy. For examples, the analyses will consider local government documents such as strategies and policies on climate change, while synthesising these with constitutional provisions detailing the powers and duties of local government.

The discussion will use the terms municipality, city and local government interchangeably, depending on the context. As noted, however, the focus case studies centre on metropolitan cities. Importantly, the energy sector has a multiplicity of fossil fuel sources, including electricity, oil and natural gas. As such, within the limited scope of this discussion, the present work limits itself to electricity because of its strategic importance to South Africa as the main source of energy. Electricity energy is also used illustratively,

because South Africa coal reserves generate 77% of its energy needs, while contributing significantly to GHG emissions.⁴¹

⁴¹ DMRE date unknown http://www.energy.gov.za/files/coal_frame.html.

2.1 Introduction

Although climate change is a global phenomenon which warrants global/ collective action, its driving forces generally emanate from the local level “in the sense that they are a result of activities (and associated emissions) in a given place”.⁴² As noted earlier, the challenge for local government is that climate change issues are just one of the aspects they have to deal with. In fact, some scholars explain it this way: “the fact that climate change is only one of the competing imperatives – alongside critical issues such as poverty reduction and economic growth – demanding the attention of city officials and politicians makes defining the right action even more contested”.⁴³ Furthermore, in 2016, it was estimated that fossil fuels combined contributed to around 88% of the total energy needs in the country.⁴⁴ This number should not be misleading, as it is also estimated that around two million households suffer from what is termed energy poverty, which implies a lack of access to electricity.⁴⁵ It is because of this scenario that the aim of this chapter is to determine points of intersection among to local government, climate mitigation and energy.⁴⁶ As a caveat, only a few laws and policies are discussed so as to depict the legal and policy frameworks.⁴⁷

2.2 Local government in South Africa

To start with, the Constitution requires the state to “respect, protect, promote and fulfil the rights in the Bill of Rights”.⁴⁸ Furthermore, as part of the state, local government is empowered to govern on its own initiative, subject to national and provincial legislation.⁴⁹ In doing so, local government in terms of what is known as developmental local

⁴² Damsø, Kjær and Christensen 2016 *Energy Policy* 75. South Africa itself is the 14th largest emitter of GHGs, with the majority of such emission coming from its energy demands; Reddy *et al* *The Local Government Climate Change Support Programme in South Africa: Real Practice in Collaborative Climate Action* 8.

⁴³ Cartwright *et al* “Climate at the city scale: the Cape Town Climate Think Tank” 3.

⁴⁴ DFFE *South Africa's Low Emission Development Strategy 2050*, 8.

⁴⁵ DFFE *South Africa's Low Emission Development Strategy 2050*, 9.

⁴⁶ In unison, and when properly construed, energy sector reform might in fact contribute towards the reduction of poverty. See discussion in chapter 3 on the benefits of renewable energy.

⁴⁷ The discussion will not, for example, consider the National Development Plan or the National Climate Change Response Policy. With the latter, a discussion of the Climate Change Bill has been considered appropriate for the purposes of this discussion.

⁴⁸ Section 7(2) of the *Constitution of the Republic of South Africa*.

⁴⁹ Section 151(3) of the *Constitution of the Republic of South Africa*.

government, which can be found in the White Paper on Local Government (White Paper),⁵⁰ and in the Constitution. In the former, it states:

In the future developmental local government must play a central role in representing our communities, protecting our human rights and meeting our basic needs. It must focus its efforts and resources on improving the quality of life of our communities, especially those members and groups within communities that are most often marginalised or excluded, such as women, disabled people and very poor people.⁵¹

This concept can also be found in section 152, which says:

- (1) The objects of local government are-
 - (a) to provide democratic and accountable government for local communities;
 - (b) to ensure the provision of services to communities in a sustainable manner;
 - (c) to promote social and economic development;
 - (d) to promote a safe and healthy environment; and
 - (e) to encourage the involvement of communities and community organisations in the matters of local government.
- (2) A municipality must strive, within its financial and administrative capacity, to achieve the objects set out in Subsection (1).

These provisions tell us that the primary role of municipalities is to engage projects and activities that would ensure that development within community is prioritised.⁵² Consider that climate mitigation is an effort to ensure development and that energy-sector reform could lead to sustainability: one could argue that mitigating climate change through energy-sector reform falls within the purview of developmental local government. This dovetails with the idea of transforming local government so that it speaks to the realities of present-day South Africa.⁵³

A further important constitutional provision is section 153, which speaks to issues of management and administration within local government:

- A municipality must-
- (a) structure and manage its administration, budgeting and planning processes to give priority to the basic needs of the community, and to promote the social and economic development of the community; and

⁵⁰ White Paper on Local Government in of GN 423 in GG 18739 of 13 March 1998.

⁵¹ White Paper on Local Government in of GN 423 in GG 18739 of 13 March 1998, 23; Mokwena *Municipal responses to climate change in South Africa: the case of eThekwin, the City of Cape Town, and the City of Johannesburg* 10.

⁵² Steytler 2004 *Law, Democracy & Development* 167; Mokwena *Municipal responses to climate change in South Africa: the case of eThekwin, the City of Cape Town, and the City of Johannesburg* 13.

⁵³ Fuo 2013 *Potchefstroom Electronic Law Journal/Potchefstroomse Elektroniese Regsblad* 225; Mokwena *Municipal responses to climate change in South Africa: the case of eThekwin, the City of Cape Town, and the City of Johannesburg* 13.

(b) participate in national and provincial development programmes.

This implies that there is a mandate on local government to plan, administer and provide for basic services, of which energy needs are part. What is more compelling is that energy needs, or electricity needs to be specific, embody an essential service that goes to the heart of what it means to survive in a poverty stricken country like South Africa.⁵⁴ In fact, some scholars have clearly stated that “the distribution of electricity is by constitutional mandate undoubtedly a core municipal function”.⁵⁵ This was also confirmed in *Joseph and Others v City of Johannesburg and Others*,⁵⁶ where the Constitutional Court confirmed that local government had a duty to facilitate access to electricity to its people, although it might not have been in a contractual arrangement with them. In this regard, the Constitutional Court specifically states:

The provision of basic municipal services is a cardinal function, if not the most important function, of every municipal government. The central mandate of local government is to develop a service delivery capacity in order to meet the basic needs of all inhabitants of South Africa, irrespective of whether or not they have a contractual relationship with the relevant public service provider.⁵⁷

In addition, it has been established that local government is empowered to make by laws in relation to functional areas in schedule 4B and 5B of the Constitution as part of the executive and legislative powers which emanate from section 151(3) and section 156 of the Constitution. The latter says:

- (1) A municipality has executive authority in respect of, and has the right to administer –
 - (a) local government matters listed in Part B of Schedule 4 and Part B of Schedule 5; and
 - (b) any other matter assigned to it by national or provincial legislation.
- (2) A municipality may make and administer by-laws for the effective administration of the matters which it has the right to administer.
- (3) Subject to Section 151(4) a by-law that conflicts with national or provincial legislation is invalid. If there is a conflict between a by-law and national or provincial legislation that is inoperative... the by-law must be regarded as valid for as long as that legislation is inoperative...
- (5) A municipality has the right to exercise any power concerning a matter reasonably necessary for, or incidental to, the effective performance of its functions.

⁵⁴ Elsässer, Hickmann and Stehle 2018 *Case Studies in the Environment* 3; Borchers, Euston-Brown and Mahomed "Energy Planning in South African cities" 580.

⁵⁵ Elsässer, Hickmann and Stehle 2018 *Case Studies in the Environment* 3

⁵⁶ *Joseph and Others v City of Johannesburg and Others* 2010 (4) SA 55 (CC).

⁵⁷ *Joseph and Others v City of Johannesburg and Others*, para 34. Own emphasis.

Du Plessis and Fuo clearly note the power of local government by stating that schedules 4B and 5B of the constitution

are basic areas where all municipalities across the country can and should exercise legislative, executive and administrative authority in relation to the environment. Even where a function does not expressly fall within Schedules 4B and 5B, a purposeful interpretation of local government's constitutional environmental powers and functions gives municipalities the space to promote the sustainability agenda.⁵⁸

In addition to the Constitution, local-government-specific laws sketch the context for the reasons why local government could contribute to climate mitigation through the transformation of the energy sector. For example, *Local Government: Municipal Systems Act*⁵⁹ requires local government to have a developmental nature in order that it meets its obligations to its people:

Whereas there is a need to set out the core principles, mechanisms and processes that give meaning to developmental local government and to empower municipalities to move progressively towards the social and economic upliftment of communities and the provision of basic services to all our people, and specifically the poor and the disadvantaged.⁶⁰

Importantly, the *Local Government: Municipal Systems Act* requires all municipalities to be developmentally orientated by adopting integrated development plans (IDP).⁶¹ An IDP is a municipal five year instrument that must link, integrate and co-ordinate plans while considering proposals for municipal development;⁶² it "aligns the resources and capacity of the municipality with the implementation of the plan"⁶³ and "forms the policy framework and general basis on which annual budgets must be based".⁶⁴ Within this IDP, local government could thus develop and link intersecting strategies and policies that deal with climate-change mitigation and energy reform. It is therefore clear that an IDP could serve as the planning strategy for local responses to issues that affect communities, including energy-sector reform as part of climate-change mitigation.

⁵⁸ du Plessis and Fuo 2017 *Commonwealth Journal of Local Governance* 80.

⁵⁹ *Local Government: Municipal Systems Act* 32 of 2000.

⁶⁰ Preamble, *Local Government: Municipal Systems Act*. A further clarification can be found in section 73 where it is stated that "(1) A municipality must give effect to the provisions of the Constitution and - (b) promote the development of the local community".

⁶¹ Section 4(2)(d) of the *Local Government: Municipal Systems Act*.

⁶² Section 25(1)(a) of the *Local Government: Municipal Systems Act*.

⁶³ Section 25(1)(b) of the *Local Government: Municipal Systems Act*.

⁶⁴ Section 25(1)(c) of the *Local Government: Municipal Systems Act*.

2.3 A bird's eye view of the international legal and policy frameworks on climate mitigation and the role of local government

This section will briefly discuss the laws and policies that address climate-change mitigation and local government. As a limitation, the main treaties are only referred to for their relevance to setting the agenda for climate change responses, otherwise the focus is mainly on those documents which make reference to the role of local government in climate mitigation.

2.3.1 The UNFCC, Kyoto Protocol and Paris Agreement

This study accepts that the United Nations framework Convention on Climate Change (UNFCC);⁶⁵ the Kyoto Protocol to the UNFCC⁶⁶ and the Paris Agreement⁶⁷ are the foremost international frameworks which state obligations in relation to climate change could be derived.⁶⁸

In its preamble, the UNFCC accepts that developing countries are in need of pursuing more energy-efficient processes in a way that would facilitate achievement of economic and social development.⁶⁹ The main objective of the UNFCC is the “stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system”.⁷⁰ The UNFCC is thus the earliest international instrument that commits states to reducing their GHG emissions. Article 4, for example, allows states to respond to climate change through their common but differentiated responsibilities and respective capacities. Thus, pursuing energy-sector reform as a climate-change mitigation strategy falls within the ambit of UNFCC objectives.

The UNFCC was followed by the Kyoto Protocol, which recognises the need to reform the energy sector through the use of renewable resources. For example, article 2 requires states to research the development and use of renewable energy.⁷¹ Furthermore, in terms

⁶⁵ *United Nations Framework Convention On Climate Change* (1992).

⁶⁶ *Kyoto Protocol to the UNFCCC* (1998).

⁶⁷ *United Nations Paris Agreement* (2015).

⁶⁸ In 2021 the Glasgow Climate Pact was agreed on at COP26. It however reaffirms the commitments of the three major agreements. For details on the Pact, see <https://unfccc.int/process-and-meetings/the-paris-agreement/the-glasgow-climate-pact-key-outcomes-from-cop26>.

⁶⁹ Preamble to the *United Nations Framework Convention On Climate Change* (1992).

⁷⁰ Article 2 of the *United Nations Framework Convention On Climate Change* (1992).

⁷¹ Article 2(1)(a)(iv) of the *Kyoto Protocol to the UNFCCC* (1998).

of article 10, states are required to formulate and implement national programmes aimed at mitigating climate change.⁷² Importantly, these climate mitigation measures can include the energy sector.⁷³ Lastly, the Paris Agreement acknowledges that there is a “need to promote universal access to sustainable energy in developing countries, in particular in Africa, through the enhanced deployment of renewable energy”.⁷⁴ Furthermore, the Paris Agreement creates a mechanism for the mitigation of greenhouse emissions, which mechanism aims

- (a) To promote the mitigation of greenhouse gas emissions while fostering sustainable development;
- (b) To incentivize and facilitate participation in the mitigation of greenhouse gas emissions by public and private entities authorized by a Party;
- (c) To contribute to the reduction of emission levels in the host Party, which will benefit from mitigation activities resulting in emission reductions that can also be used by another Party to fulfil its nationally determined contribution; and
- (d) To deliver an overall mitigation in global emissions

Consequently, in terms of the UNFCCC, Kyoto Protocol and Paris Agreement, states have commitments to enhance climate mitigation and pursue the utilisation of renewable energy sources. These tasks are envisioned to be carried out on various levels across states, including local or sub-national levels.

2.3.2 The New urban agenda

It was noted in chapter 1 that Agenda 21 set the tone for the role of local government in sustainability issues.⁷⁵ For example, it has been said that

Local Agenda 21 (LA21) was developed [...] and was designed as the practical framework through which to promote the idea of ‘thinking locally, while acting globally’, to meet sustainable development objectives through a more effective, bottom-up approach.⁷⁶

⁷² Article 10(b) of the *Kyoto Protocol to the UNFCCC* (1998).

⁷³ Article 10(b)(i) of the *Kyoto Protocol to the UNFCCC* (1998).

⁷⁴ Preamble to the *United Nations Paris Agreement* (2015).

⁷⁵ Agenda 21 states that “because so many of the problems and solutions being addressed by Agenda 21 have their roots in local activities, the participation and cooperation of local authorities will be a determining factor in fulfilling its objectives.” *Earth Summit Agenda 21 – The United Nations Programme of Action from Rio*. United Nations Publication no E93I11 (1992), para 28.1.

⁷⁶ Fudge and Peters 2009 *Journal of Integrative Environmental Sciences* 104. A positive note was given to how local government is facilitating the pursuit of sustainability: “the efforts of local authorities are making Agenda 21 and the pursuit of sustainable development a reality at the local level through the implementation of “local Agenda 21s” and other sustainable development programmes.” *Programme for the Further Implementation of Agenda 21* A/RES/S-19/2 (1997), para 12.

This idea, of thinking locally, has been pursued through various other instruments. Some of these speak directly to urbanism, climate change and local government. One example is the 2016 New Urban Agenda,⁷⁷ which plays an important role around making cities and human settlements equitable, prosperous, sustainable, just, equal and safe.⁷⁸ It also contains principles that are aimed at ensuring environmental sustainability by promoting clean energy and sustainable use of land and resources in urban development.⁷⁹ The New Urban Agenda encourages countries to adopt a smart city approach by making use of opportunities from digitalization, clean energy and technologies as well as innovative transport technologies that will provide more environmentally friendly choices while boosting sustainable economic growth and enabling cities to improve their service delivery.⁸⁰

It also directly mentions local government in relation to energy reform by encouraging

national, subnational and local governments, as appropriate, to develop sustainable, renewable and affordable energy and energy-efficient buildings and construction modes and to promoting energy conservation and efficiency, which are essential to enable the reduction of greenhouse gas and black carbon emissions, ensure sustainable consumption and production patterns, help create new decent jobs, improve public health and reduce the costs of energy supply.⁸¹

This shows the acceptance that the reform of the energy sector is not possible without the input, directly or otherwise, of local government. Furthermore, considering that urbanisation and migration are on the rise (also in South Africa), municipalities whose jurisdictions experience these cannot avoid engaging in energy diversification, otherwise they will fail at meeting their service delivery obligations. An important point, however, is that instruments like Agenda 21, the New Urban Agenda and the commitments made in relation to local government are not at all binding.⁸² However, once local governments have expressed their intentions to participate in climate-change mitigation or energy transformation through their governing tools like integrated development plans (IDPs) for example, their commitments become obligatory within a national scale.

⁷⁷ UNHABITAT *New Urban Agenda* 2016.

⁷⁸ Principle 11 of the UNHABITAT *New Urban Agenda* 2016.

⁷⁹ Principle 14 of the UNHABITAT *New Urban Agenda* 2016.

⁸⁰ Principle 66 of the UNHABITAT *New Urban Agenda* 2016.

⁸¹ Principle 75 of the UNHABITAT *New Urban Agenda* 2016.

⁸² Fudge and Peters 2009 *Journal of Integrative Environmental Sciences* 105.

2.3.3 Sustainable Development Goals 2030 (SDG)

The Sustainable Development Goals (SDGs),⁸³ are composed of 17 goals which represent the global vision for sustainability and development. For the purposes of this discussion, SDG goals 7, 11 and 13 are relevant. SDG 7 deals with ensuring “access to affordable, reliable, sustainable and modern energy for all”.⁸⁴ To ensure that SDG 7 is fulfilled, a set of targets is provided:

7.1 By 2030, ensure universal access to affordable, reliable and modern energy services

7.2 By 2030, increase substantially the share of renewable energy in the global energy mix

7.3 By 2030, double the global rate of improvement in energy efficiency

7.a By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology

7.b By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support.⁸⁵

Whether the 2030 targets are actually feasible is debatable, but the fact that states agreed to these indicates the extent to which a move towards renewable energy has become crucial if they are to operate within sustainable pathways. SGD 7, however, can be implemented within an identifiable space, of which a city could be one. This is where SDG 11 comes in, which deals with making “cities and human settlements inclusive, safe, resilient and sustainable”.⁸⁶ Amongst the many targets set for this SDG, there is one that deals with climate-change mitigation: “by 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change”.⁸⁷ Again, the jury is out as to whether the 2020 target was met; it is significant, though, that climate mitigation is associated with the functioning of cities and how these are resilient and sustainable. This goal aligns strategically with SDG 13, which requires states to “take urgent action to combat climate change and its impacts”.⁸⁸ One of the targets

⁸³ *Transforming our world: the 2030 Agenda for Sustainable Development* A/RES/70/1 (2015).

⁸⁴ *Transforming our world: the 2030 Agenda for Sustainable Development* A/RES/70/1 (2015), 14.

⁸⁵ *Transforming our world: the 2030 Agenda for Sustainable Development* A/RES/70/1 (2015), 19.

⁸⁶ *Transforming our world: the 2030 Agenda for Sustainable Development* A/RES/70/1 (2015), 21.

⁸⁷ *Transforming our world: the 2030 Agenda for Sustainable Development* A/RES/70/1 (2015), 22.

⁸⁸ *Transforming our world: the 2030 Agenda for Sustainable Development* A/RES/70/1 (2015), 23.

involves the promotion of mechanisms which raise capacity for effective climate change planning and management.⁸⁹

This indicates that acceptance exists on the international level that climate change is a reality which needs to be mitigated; that national governments alone will not be equal to the task of mitigation; and that local levels of government have an indispensable role to play in climate-change mitigation and energy reform processes.

2.4 Energy in South Africa

More than 90% of the country's electricity is produced by the monopolised Eskom, the national power utility.⁹⁰ Eskom controls the larger portion of the generation and transmission of electricity, while only sharing the distribution with municipalities.⁹¹ Indeed, the distribution of electricity in South Africa is a shared responsibility between Eskom, municipalities and independent power producers (IPPs). Municipalities and IPPs, on the other hand, must apply for or register as distributors with the National Energy Regulator of South Africa in order to distribute power to end-users.⁹² However, as Le Grange maintains, though municipalities have the ability to distribute power it comes with one or two caveats: "municipalities must acquire electricity from Eskom or an IPP at a regulated price and on-sell the same to municipal customers at a regulated margin."⁹³ In view of this, the present section will briefly map the outlook of energy laws and policies in South Africa, along with a discussion of the *Climate Change Bill*, which connects the dots between mitigation and energy-sector reform.⁹⁴

2.4.1 White Paper on Energy Policy, 1998

The White Paper on Energy Policy sought to contextualise the energy problem by noting that it has both a social and technical dimension. In other words, energy can be used in

⁸⁹ *Transforming our world: the 2030 Agenda for Sustainable Development* A/RES/70/1 (2015), 23.

⁹⁰ DFFE *South Africa's Low Emission Development Strategy 2050* 9; Elsässer, Hickmann and Stehle 2018 *Case Studies in the Environment* 1.

⁹¹ Elsässer, Hickmann and Stehle 2018 *Case Studies in the Environment* 2. Energy in South Africa is regulated through the National Energy Regulator of South Africa (NERSA): <https://www.nersa.org.za>.

⁹² Section generally the provisions of 10 of the *Electricity Regulation Act* Act 4 of 2006.

⁹³ le Grange date unknown [https://uk.practicallaw.thomsonreuters.com/w-018-5347?transitionType=Default&contextData=\(sc.Default\)&firstPage=true](https://uk.practicallaw.thomsonreuters.com/w-018-5347?transitionType=Default&contextData=(sc.Default)&firstPage=true).

⁹⁴ There are a lot of potentially applicable laws within the energy sector. The discussion merely uses illustrative examples.

households, yet it can also be used in economic activities: “in some ways energy is rather like money in the economy, in that it flows through and empowers all social and economic sectors”.⁹⁵ The White Paper also recognises that the reason why South Africa has relied heavily on coal is because it is cheaper.⁹⁶ Consequently, the White Paper was premised on a number of objectives: the increase in access to more affordable energy related services;⁹⁷ improving overall energy governance;⁹⁸ stimulating economic development;⁹⁹ the management of energy induced environmental impacts;¹⁰⁰ and securing supply through the diversification of energy sources.¹⁰¹ It includes an acceptance that renewable energy sources have the capacity to

contribute towards a long-term sustainable energy future. The development of government’s renewable energy policy is guided by a rationale that South Africa disposes of very attractive renewable resources, particularly solar and wind and that renewable applications are in fact the least cost energy service in many cases; more so when social and environmental costs are taken into account.¹⁰²

The document is important to the extent that it is the first to detail the country’s energy vision.¹⁰³ To ensure that there was continuity between the vision and binding law, the government promulgated the *Energy Act*.¹⁰⁴

2.4.2 *Energy Act 34 of 2008*

As with the White Paper on Energy Policy, the *Energy Act* notes in its preamble that there is a need for diverse energy sources and to conduct energy planning.¹⁰⁵ That planning is significant for energy diversification is confirmed by Damsø, Kjær and Christensen, who

⁹⁵ DME *White Paper on the Energy Policy* 21.

⁹⁶ DME *White Paper on the Energy Policy* 23; Elsässer, Hickmann and Stehle 2018 *Case Studies in the Environment* 1.

⁹⁷ DME *White Paper on the Energy Policy* 23.

⁹⁸ DME *White Paper on the Energy Policy* 24. Here, the government accepted that improvements in governance meant that the government had to set targets on more long-term goals, like transitioning to renewable energy sources.

⁹⁹ DME *White Paper on the Energy Policy* 25.

¹⁰⁰ DME *White Paper on the Energy Policy* 26. This process is one that supports renewables. Renewables like wind, for example, do not result in fires.

¹⁰¹ DME *White Paper on the Energy Policy* 27. One reason for this objective is that apartheid era energy governance was focused on exploitation of resources to the maximum extent possible, with under investments in other sources.

¹⁰² DME *White Paper on the Energy Policy* 79.

¹⁰³ The White Paper on Energy Policy made provision for the development of an Integrated Energy Plan. Such plan will not form part of the discussion.

¹⁰⁴ *Energy Act* 34 of 2008.

¹⁰⁵ Preamble to the *Energy Act*.

say that “by limiting the scope of enquiry, e.g. by local as opposed to national energy planning, more aspects of a given planning process and detailed knowledge of the local area can be taken into account, providing a significant potential for optimal energy planning”.¹⁰⁶ The *Energy Act* thus makes potential provision for a space for local government in relation to planning. Furthermore, the *Energy Act* has a number of objectives:

- (a) ensure uninterrupted supply of energy to the Republic;
- (b) promote diversity of supply of energy and its sources;
- (c) facilitate effective management of energy demand and its conservation;
- [...]
- (l) contribute to sustainable development of South Africa's economy.¹⁰⁷

These intersecting goals could be construed to imply that climate mitigation as a path to sustainability is not possible without diversifying energy sources; planning for energy diversification ultimately involves all levels of government, including local government. The *Energy Act* does not, however, explicitly spell out any role for local government. Though this is concerning, it is clear that cooperative governance as mandated by chapter 3 of the Constitution, seems to indicate a place for local government in energy planning. As will be seen below, there are in fact instances where local government can be active around this.

2.4.3 Integrated Resource Plan, 2019

Since 2010, the government has published at least two integrated resources plans. The latest one is the 2019 *Integrated Resources Plan* (IRP).¹⁰⁸ It has long since been known that constantly evolving mitigation measures and diversifying environmental problems, the IRP had to be a living document which would be amended/ reviewed every two years so as to ensure its relevance.¹⁰⁹ Thus, the present 2019 IRP emphasises the need for energy security (tied to non-renewable sources), defined as follows: “South Africa developing adequate generation capacity to meet its demand for electricity, under both

¹⁰⁶ Damsø, Kjær and Christensen 2016 *Energy Policy* 75.

¹⁰⁷ Section 2 of the *Energy Act*.

¹⁰⁸ Integrated Resource Plan in Government Gazette No. 42784 of 2019.

¹⁰⁹ Fontana, Khumalo and Dladla 2021 <https://thelawreviews.co.uk/title/the-renewable-energy-law-review/south-africa>.

the current low-growth economic environment and even when the economy turns and improves to the level of 4% growth per annum”.¹¹⁰ However, the IRP continues to note that South Africa has abundant coal reserves and that coal itself will remain a significant source of electricity in the foreseeable future.¹¹¹ This presents itself as a seeming contradiction of the commitment to transform the energy sector and it flies in the face of mitigation. Consider in terms of this that the discussion shows acceptance of the fact that moving to cleaner energy is a process that will require a “just transition”: one based on time and investments, especially when regard is given to the dire situation around energy demands exemplified by constant power cuts through load shedding.¹¹²

An important acknowledgment made in the IRP is that renewable energy presents a viable option for diversifying the energy mix. For example, the IRP notes that

[s]olar PV, wind and CSP with storage present an opportunity to diversify the electricity mix, to produce distributed generation and to provide off-grid electricity. Renewable technologies also present huge potential for the creation of new industries, job creation and localisation across the value chain.¹¹³

The IRP has thus put in place plans to decommission some of Eskom’s coal-fired stations between 2030 and 2050. What would be required then is firm commitment and noticeable investment within the renewable energy sector if this is to bear any material benefits to the public or if it is to promote climate mitigation.

Another exciting process which has been streamlined within the IRP is that of embedded generation (or distributed generation), where electricity generation installations with a capacity of between 1MW and 10MW are purposefully connected to the national grid.¹¹⁴ This is significant, especially to the extent that private individuals, companies and particularly municipalities could become part of it. In fact, Sustainable Energy Africa (SEA) has found that

several cities are now enabling small-scale embedded generation (SSEG). SSEG has been ground-breaking – it has allowed decentralised renewable energy onto the grid to bolster

¹¹⁰ Integrated Resource Plan in Government Gazette No. 42784 of 201911.

¹¹¹ Integrated Resource Plan in Government Gazette No. 42784 of 201912.

¹¹² Integrated Resource Plan in Government Gazette No. 42784 of 201944; DFFE *South Africa's Low Emission Development Strategy 2050*, 56; Elsässer, Hickmann and Stehle 2018 *Case Studies in the Environment* 2.

¹¹³ Integrated Resource Plan in Government Gazette No. 42784 of 201913.

¹¹⁴ Integrated Resource Plan in Government Gazette No. 42784 of 201945.

local energy security, and has fundamentally changed the municipal electricity distribution business, requiring cities to better understand their cost of supply.¹¹⁵

The only concerning issue is that they would need licenses for distribution in terms of section 10(2)(g) of the *Electricity Regulation Act*.¹¹⁶ As will be demonstrated below, some amendments to the electricity laws have opened up space for local government involvement.

2.4.4 Climate Change Bill

The *Climate Change Bill*¹¹⁷ is considered to be a game changer in relation to addressing climate change. It has been reported in the South Africa's Low Emission Development Strategy 2050 that, until the Bill came, local governments had been addressing climate-change mitigation in ways that included

the development of urban low emissions development strategies and broader climate change strategies, and the implementation of a wide range of projects from embedded generation installations on their own buildings to implementing local building codes that support energy efficiency to interventions in the waste sector.¹¹⁸

However, all these processes were pursued in a way that was not aligned or coordinated.¹¹⁹ For this reason, some of the objectives of the *Climate Change Bill* include the following:

2. The objects of this Act are to –
 - (a) provide for a coordinated and integrated response by the economy and society to climate change and its impacts in accordance with the principles of cooperative governance;
 - (b) provide for the effective management of inevitable climate change impacts by enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change, with a view to building social, economic and environmental resilience and an adequate national adaptation response in the context of the global climate change response;
 - [....]
 - (d) to ensure a just transition towards a low carbon economy and society considering national circumstances;¹²⁰

¹¹⁵ SEA *State of Energy in South African Cities 2020* 12.

¹¹⁶ Integrated Resource Plan in Government Gazette No. 42784 of 201945; Elsässer, Hickmann and Stehle 2018 *Case Studies in the Environment* 4.

¹¹⁷ Climate Change Bill in Government Gazette No. 45299 of 2022.

¹¹⁸ DFFE *South Africa's Low Emission Development Strategy 2050*, 17

¹¹⁹ DFFE *South Africa's Low Emission Development Strategy 2050*, 17.

¹²⁰ Section 2 of the Climate Change Bill in Government Gazette No. 45299 of 2022.

Clearly, one can see a strong commitment to a system of mitigation which is coordinated and has ties with the national government. In order to ensure that such coordination follows a chain of accountability, provision is made for municipal forums, which would directly put local government at the forefront of climate-change mitigation. The Bill specifically requires that there be a Municipal Forum on Climate Change, which would

- (a) coordinate climate change response actions for those activities within its operational control of the relevant municipality in accordance with this Act; and
- (b) provide a report on such actions to the relevant Provincial Forum on Climate Change.¹²¹

Additionally, the Bill has provisions on how provinces and municipalities are to respond to climate change. For example, a mayor of a metropolitan municipality is required to undertake a climate change needs assessment for the municipality within a year of the National Adaptation Strategy and Plan being published;¹²² formulate steps to address the effects of climate change if climate change affects a municipality's functioning;¹²³ develop within two years a climate change response implementation plan as part of a municipality's planning policies, instruments and programmes;¹²⁴ and to review such climate change response implementation plan at least once in five years.¹²⁵ The Bill also accepts that provinces and municipalities can have different geographies and, subsequently, climate needs. Because of the uniqueness of every province or municipality, the Bill does not offer a one-size-fits-all approach; rather, it offers contextual and pragmatic considerations. For example, the Bill notes that any climate change needs and response assessments should identify those that are unique to the municipality;¹²⁶ spatially map vulnerable parts (to climate change) within the municipality;¹²⁷ and ensure that the municipality's climate change response implementation plan forms part of the municipality's IDP.¹²⁸

¹²¹ Section 9(3) of the Climate Change Bill in Government Gazette No. 45299 of 2022.

¹²² Section 15(1)(a) of the Climate Change Bill in Government Gazette No. 45299 of 2022.

¹²³ Section 15(1)(b) of the Climate Change Bill in Government Gazette No. 45299 of 2022.

¹²⁴ Section 15(1)(d) of the Climate Change Bill in Government Gazette No. 45299 of 2022.

¹²⁵ Section 15(1)(e) of the Climate Change Bill in Government Gazette No. 45299 of 2022.

¹²⁶ Section 15(2)(b) of the Climate Change Bill in Government Gazette No. 45299 of 2022.

¹²⁷ Section 15(1)(c) of the Climate Change Bill in Government Gazette No. 45299 of 2022.

¹²⁸ Section 15(5) of the Climate Change Bill in Government Gazette No. 45299 of 2022.

It should be noted too that South Africa has now adopted a *Carbon Tax Act*,¹²⁹ which puts a premium on low carbon emissions,¹³⁰ which could indirectly force companies to switch to renewable energy sources. Suffice to say this is a national measure seeking to transform the energy sector.

2.4.5 Amendments to the Electricity Regulations on New Generation Capacity on 16 October 2020

The year 2020 was perhaps a turning point in the efforts to mitigate climate change while reforming the energy sector. The *Amendments to the Electricity Regulations on New Generation Capacity*¹³¹ have now clearly spelt out a role for local government in energy diversification. In fact, these amendments are significant for local government because they allow municipalities which are in a good financial position to generate their own electricity.¹³² Section 4 of the amended regulations states:

Regulation 5 of the Regulations (2009 regulations) is hereby amended by the addition of the following sub-regulation:

(3)A municipality, as an organ of state, may apply to the Minister to procure or buy new generation capacity in accordance with the Integrated Resource Plan, and such municipality must-

- a) conduct and submit a feasibility study as contemplated in sub-regulation (2), where it intends to deliver the new generation capacity project through an internal mechanism as contemplated in section 76(a) of the Municipal Systems Act;
- b) submit proof that it has complied with the provisions of section 120 of the Municipal Finance Management Act and reg Municipal Public-Private Partnership Regulations...where it intends to deliver the new generation capacity through an external mechanisms as contemplated in section 76(b) of the Municipal Systems Act.

Given that not all municipalities have equal status in terms of size and even finances, there might be a concern that, as progressive as this outcome is, not all municipalities would be able to benefit from it.¹³³ Yet the precedent set here is important, because it

¹²⁹ *Carbon Tax Act* 15 of 2019.

¹³⁰ See for example section 7 of the *Carbon Tax Act*.

¹³¹ Amendments to the Electricity Regulations on New Generation Capacity in Government Gazette 42810 of 2020.

¹³² See section 4 of the Amendments to the Electricity Regulations on New Generation Capacity in Government Gazette 42810 of 2020. Also see Fontana, Khumalo and Dladla 2021 <https://thelawreviews.co.uk/title/the-renewable-energy-law-review/south-africa>.

¹³³ Interestingly, Fuo had observed a few years ago that municipalities can self-fund: "there is nothing which prevents municipalities that have the resources to self-fund environmental projects that typically

potentially allows municipalities to work with a vision and goal that would facilitate raising of their own finances through new generation capacity.

2.5 Conclusion

When one traces the role of local government in South Africa, and when one examines this role against the prevailing international discussions on the capacities of local government to be agents of change, it can be reasonably inferred that local government has a role to play in climate mitigation and that this role could be realised in part through energy-sector reform. A reading of the South African legal and policy framework on energy confirms this, supporting the proposition that energy reform is necessary and that such reform cannot be addressed by the state alone.

fall within the legislative area of competence of national and provincial government – as defined by Schedules 4A and 5A – in so far as such projects seek to further the objectives of Section 24 of the Constitution and are not in conflict with national and provincial programmes.” Fuo 2015 *Commonwealth Journal of Local Governance* 32.

3.1 Introduction

The previous chapter concluded that existing legal and policy frameworks acknowledge the role that local government can play in relation to energy matters. This chapter details renewable energy as it pertains to South Africa. The White Paper on Renewable Energy¹³⁴ defines renewable energy as “naturally occurring non-depletable sources of energy, such as solar, wind, biomass, hydro, tidal, wave, ocean current and geothermal, to produce electricity, gaseous and liquid fuels, heat or a combination of these energy types”.¹³⁵ However, it should be said that renewable energy as a topic of discussion is too broad. For instance, Barnard notes that renewable energy issues range from aspects such as procurement processes, licensing requirements, implementation of the renewable energy to fiscal matters.¹³⁶ The present piece cannot discuss all of these. However, the aim of this chapter is to briefly refer to the issue of the potential for renewables to reform the energy sector; the benefits and barriers to renewables; as well as the legal and policy framework on renewables in South Africa.

3.2 The potential for energy-sector reform as a specific climate-change mitigation activity

As noted, energy is the backbone of many societies and energy supply is one of the services governments and municipalities cannot avoid. Thus, providing affordable and sufficient energy is essential for poverty eradication and even for improving the quality of life of societies. However, the prevalence of fossil fuel-based power generation and the exponential increase in populations have led to a growing demand for energy resulting in global challenges associated with rapid growth in GHG emissions. Renewable energy therefore holds the key to potentially reduce GHG emissions from fossil fuel-based energy generation while facilitating climate-change mitigation. According to the White Paper on Renewable Energy,¹³⁷ it has the potential to completely diversify the energy mix and ensure energy security.¹³⁸ Energy-sector reform away from the present fossil fuel-led

¹³⁴ White Paper on Renewable Energy in Government Gazette No. 26169 of 2003. Before this document, South Africa had the White Paper on the Energy Policy of the Republic of South-Africa of 1998. It is not necessary to delve into this document considering the 2003 White Paper on Renewable Energy.

¹³⁵ White Paper on Renewable Energy in Government Gazette No. 26169 of 2003 1.

¹³⁶ Barnard 2012 *Potchefstroom Electronic Law Journal* 222.

¹³⁷ White Paper on Renewable Energy in Government Gazette No. 26169 of 2003.

¹³⁸ White Paper on Renewable Energy in Government Gazette No. 26169 of 2003, 12.

economies could ultimately facilitate pathways to sustainability by working towards the objective of section 24 of the Constitution which requires that the state protect the environment for the benefit of present and future generations through measures that “secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development”.¹³⁹ It is also accepted that energy transformation through the use of fossil fuels results in less emissions and the preservation of water, since coal-fired power plants consume voluminous amounts of the latter.¹⁴⁰ Furthermore, given that renewable energy can be distributed for use near point of origin/ production, a lesser extent of energy loss can be achieved, hence energy maximisation.¹⁴¹

In the end, it is to any country’s benefit to move towards renewable energy as this facilitates climate-change mitigation. South Africa could particularly benefit from this, since it has many sources of renewable energy in abundance.¹⁴² Yet, even as the country gears up for this transition and transformation, there must be caution, as there will be consequences which would need to be managed: for example, handling coal-related job losses.

As illustrative examples, the discussion briefly considers three sources of renewable energy: solar, wind and hydro energy.¹⁴³

3.2.1 Wind energy

This form of renewables relies on moving air to generate energy, where faster winds produce more.¹⁴⁴ It is considered to be the largest renewable energy globally.¹⁴⁵ Wind exists everywhere in the world: in some places, with considerable energy density. The White Paper on Renewable Energy notes that South has the capacity to generate wind energy along its coastal lines and in other places, such as the Eastern Highveld Plateau and even in places with low wind power such as the Limpopo basin.¹⁴⁶ Presently, South

¹³⁹ Section 24(b)(iii) of the *Constitution of the Republic of South Africa*.

¹⁴⁰ White Paper on Renewable Energy in Government Gazette No. 26169 of 2003, 12.

¹⁴¹ White Paper on Renewable Energy in Government Gazette No. 26169 of 2003, 12.

¹⁴² See discussion under chapter 3 on the types of renewable energy sources.

¹⁴³ Biomass is another form, but it will not be discussed here.

¹⁴⁴ SAGOV date unknown http://www.energy.gov.za/files/esources/renewables/r_wind.html.

¹⁴⁵ SAGOV date unknown http://www.energy.gov.za/files/esources/renewables/r_wind.html.

¹⁴⁶ White Paper on Renewable Energy in Government Gazette No. 26169 of 2003, 13.

Africa does have a number of wind farms, including Klipheuwel Wind Farm and Enertrag.¹⁴⁷ These already are known to produce energy for the communities surrounding them. However, the challenges around this form of renewable energy are that it makes noise, could have negative visual impacts and could affect the lives of birds.

3.2.2 Solar energy

It is known that South Africa has some of the highest solar radiation levels in the world.¹⁴⁸ These would support solar thermal power generation, solar photovoltaic and solar water heating applications.¹⁴⁹ Solar is also climate friendly in that, unlike coal-fuelled electricity, solar results in no emissions.¹⁵⁰ It seems however that the problems that affect the harnessing and storage centre lie on the fact that there are considerable price considerations to constructing solar systems.¹⁵¹ This notwithstanding, there are some success stories that demonstrate the potential for solar energy, though. For example, one of the biggest malls in South Africa, the Mall of Africa, has on its roof a solar photovoltaic system.¹⁵² This system is believed to be the largest in the southern hemisphere and it powers the mall's daily operations with an output of 7800MWh per annum while saving 8 034 tonnes of CO₂ annually.¹⁵³

3.2.3 Hydro-power

For as long as there is water, hydro-power will "never be finished".¹⁵⁴ This form of power comes from water related tides, waves, rivers and waterfalls.¹⁵⁵ A unique aspect of hydro-power is that, while it serves as a power-generating renewable form of energy, it compliments other socio-economic related projects such as farming and irrigation.¹⁵⁶

¹⁴⁷ SAGOV date unknown http://www.energy.gov.za/files/esources/renewables/r_wind.html.

¹⁴⁸ SAGOV date unknown http://www.energy.gov.za/files/esources/renewables/r_solar.html.

¹⁴⁹ White Paper on Renewable Energy in Government Gazette No. 26169 of 2003, 20; SAGOV date unknown http://www.energy.gov.za/files/esources/renewables/r_solar.html.

¹⁵⁰ SAGOV date unknown http://www.energy.gov.za/files/esources/renewables/r_solar.html.

¹⁵¹ White Paper on Renewable Energy in Government Gazette No. 26169 of 2003, 20.

¹⁵² IOL 2018 <https://www.iol.co.za/business-report/companies/mall-of-africa-covered-in-r50m-rooftop-solar-system-glory-17255606>. Also see <https://www.businessinsider.co.za/mall-of-africa-just-installed-the-worlds-10th-biggest-solar-roof-2018-9>.

¹⁵³ de Villiers 2018 <https://www.businessinsider.co.za/mall-of-africa-just-installed-the-worlds-10th-biggest-solar-roof-2018-9>.

¹⁵⁴ SAGOV date unknown http://www.energy.gov.za/files/esources/renewables/r_hydro.html.

¹⁵⁵ SAGOV date unknown http://www.energy.gov.za/files/esources/renewables/r_hydro.html.

¹⁵⁶ SAGOV date unknown http://www.energy.gov.za/files/esources/renewables/r_hydro.html.

Furthermore, in the case of hydro-power, there is no release of carbon dioxide or other pollutants and there is also no risk of explosions or even of the many health-related impacts of coal-fired plants to those working within the industry.¹⁵⁷ Furthermore, energy may be generated on demand and is therefore not an intermittent source like wind and solar energy. However, the construction of dams, for example, destroys natural habitats, thereby impacting on biodiversity. A decision as to its implementation then boils down to a cost-benefit analysis to the point where the benefits of hydro-power are measured against the initial environmental impacts.

3.3 The benefits and barriers of renewable energy

3.3.1 Benefits

Renewable energy has the potential to achieve present-world energy demands.¹⁵⁸ In fact, some scholars have made projections estimating the extent to which renewable energy could contribute to future energy supply indicating that it could practically satisfy all the world's energy needs in the not-too-distant future.¹⁵⁹ Thus, relying on renewable energy, which is non-depletable, could provide the world with a sustainable source of energy. This would dovetail with the view that energy sustainability must be the overarching and holistic framework governing the question of our energy future.¹⁶⁰

As noted, energy generated by fossil fuels is way greater than that which could be produced through the use of renewable energy.¹⁶¹ To this end, renewable energy could assist states in reducing GHG emissions will working to towards transitioning from coal. Such move to renewables can also assist states in addressing the various health and social ills that are associated with coal and its productions.¹⁶²

¹⁵⁷ The Centre for Environmental Rights produced a report in which it was found that coal-fired power plants have many health related risks, including lung issues and heart diseases; Holland *Health impacts of coal fired power plants in South Africa* 15; Elsässer, Hickmann and Stehle 2018 *Case Studies in the Environment* 2.

¹⁵⁸ Turkenburg and Faaij *Renewable energy technologies* 240.

¹⁵⁹ Singer, Denruyter and Yener "The energy report: 100% renewable energy by 2050" 38.

¹⁶⁰ Singer, Denruyter and Yener "The energy report: 100% renewable energy by 2050" 38.

¹⁶¹ DME *White Paper on the Energy Policy* 79.

¹⁶² Holland *Health impacts of coal fired power plants in South Africa* 15; Elsässer, Hickmann and Stehle 2018 *Case Studies in the Environment* 2.

It is also acknowledged that there is significant potential for job creation in the renewable energy sector,¹⁶³ which is especially important in the South African context with its high levels of unemployment. The White Paper on Renewable Energy also notes that these job opportunities would lead to a localisation of the value chain.¹⁶⁴ In the context of South Africa, this would be significant, because its renewable energy potential is enormous, greatly exceeding current and projected demand.¹⁶⁵ Ultimately, it seems that renewables properly implemented “can stimulate environmental protection, technology development, economic and employment growth [...] as well as [secure] a sustainable energy future for South Africa”.¹⁶⁶

3.3.2 Barriers

Despite these benefits, it is acknowledged that there is no energy production without even minute footprints, impacts or waste.¹⁶⁷ For example, renewable energy technologies like wind and solar are intermittent, since the generation of energy from these sources is dependent on certain conditions being present such as the sun shining or the wind blowing.¹⁶⁸ As a result of this, it might be difficult to have these serve as baseload energies since they cannot provide continuous power at a constant rate.

Furthermore, renewable energy could initially be expensive, as there is need for initial investments that could be difficult to stream-line in a poverty-stricken country.¹⁶⁹ The government did state in 2003 within the White Paper on Renewable Energy that there are significant costs associated with renewable energy and that there is a need for the provision of incentives that could encourage more investments into it.¹⁷⁰

In South Africa, perhaps unfortunate circumstances are that policy and legal frameworks have not yet developed to the point where excess energy produced through renewable

¹⁶³ Turkenburg and Faaij *Renewable energy technologies* 220-221.

¹⁶⁴ Integrated Resource Plan in Government Gazette No. 42784 of 201913.

¹⁶⁵ Banks and Schäffler *The potential contribution of renewable energy in South Africa* 13.

¹⁶⁶ Legora *A legal analysis of South Africa's international climate change mitigation obligations in the renewable energy sector* 51.

¹⁶⁷ Rogner and Popescu "An introduction to energy" 31.

¹⁶⁸ Neuhoﬀ 2005 *Oxford review of economic policy* 89; DME *White Paper on the Energy Policy* 79.

¹⁶⁹ Legora *A legal analysis of South Africa's international climate change mitigation obligations in the renewable energy sector* 55; DME *White Paper on the Energy Policy* 79.

¹⁷⁰ White Paper on Renewable Energy in Government Gazette No. 26169 of 2003 2.

sources can be sold back to the grid.¹⁷¹ This is probably owing to the hold that Eskom has on power generation, transmission and distribution. It also seems that there are no tax incentives for those (corporations or otherwise) who would engage in projects related to renewable energy production.¹⁷²

Furthermore, the uncertainties of political change leave municipalities vulnerable in that there might be short-term planning which is in itself a barrier for energy-sector reform, since the latter is a long-term project.¹⁷³ This is why some scholars have found that municipalities such as the CCT (which has had a steady political landscape of the last few years) have been constantly stable since 2004, leading the way in relation to climate change responses.¹⁷⁴

3.4 The policy framework applicable to renewable energy

3.4.1 White Paper on Renewable Energy

The White Paper on Renewable Energy was meant to set out the goals, principles and objectives of the government in relation to renewable energy. However, it accepted the predicament that South Africa finds itself in where it relies heavily on coal for its own needs whilst also being a major exporter of coal.¹⁷⁵ In other words, unless the export finances can be replaced and the heavy reliance on coal could be reduced, the reality is that coal will remain a significant part of the energy matrix even as the country seeks to diversify its energy sources. This notwithstanding, the White Paper stated the government's vision, clearly observing that it aims for "an energy economy in which modern renewable energy increases its share of energy consumed and provides affordable access to energy throughout South Africa, thus contributing to sustainable development and environmental conservation".¹⁷⁶ Interestingly, though, the White Paper subsequently acknowledges the financial constraints related to the actual implementation

¹⁷¹ Fontana, Khumalo and Dladla 2021 <https://thelawreviews.co.uk/title/the-renewable-energy-law-review/south-africa>.

¹⁷² Fontana, Khumalo and Dladla 2021 <https://thelawreviews.co.uk/title/the-renewable-energy-law-review/south-africa>.

¹⁷³ Borchers, Euston-Brown and Mahomed "Energy Planning in South African cities" 580.

¹⁷⁴ Pasquini *et al* 2015 *Climate and Development* 67. These authors further said that "the political nature of local government means that all decisions, including climate adaptation, are affected by political interests."

¹⁷⁵ White Paper on Renewable Energy in Government Gazette No. 26169 of 2003 3.

¹⁷⁶ White Paper on Renewable Energy in Government Gazette No. 26169 of 2003 1.

of any renewable energy projects.¹⁷⁷ It thus remains unclear how implementation would ensue.

3.4.2 *Energy Efficiency Strategy of the Republic of South Africa 2005*

Following the White Paper on Energy Policy, the government set the *Energy Efficiency Strategy of the Republic of South Africa*.¹⁷⁸ The vision of the strategy is to “encourage

sustainable energy sector development and energy use through efficient practices thereby minimising the undesirable impacts of energy usage upon health and the environment, and contributing towards secure and affordable energy for all.

The context for the strategy was that South Africa was highly energy inefficient.¹⁷⁹ Unfortunately, more than 15 years later, not much has changed: “South Africa remains highly energy inefficient, ranked 23 out of the 25 world’s top energy- consuming countries in the Energy Efficiency Scorecard, ahead only of the oil-producing countries, Saudi Arabia and United Arab Emirates”.¹⁸⁰ This notwithstanding, developments related to energy efficiency involve the production of a *Draft Post-2015 Energy Efficiency Strategy*,¹⁸¹ which never became final. The state did make efforts to provide guidelines for how energy efficiency could be pursued. For example, the *South Africa National Building Standards: SANS 10400-XA*¹⁸² which are specifically tailored for municipalities was adopted “in 2011

in an effort to reduce greenhouse gas emissions caused by energy inefficiency in new buildings and extensions, SANS 10400-XA provides regulations that municipalities in South Africa must enforce [...]. Buildings typically account for 40% of energy consumed in South Africa, yet they have high potential for energy savings. The regulations aim to reduce energy inefficiencies in building design due to energy loss and energy consumption and aims to increase environmental sustainability while reducing greenhouse gases. Correctly designing a building envelope, combined with energy saving techniques can reduce both energy losses and energy consumption by up to 78 percent and present significant cost savings related to utility costs for heating, for example. The SANS 10400- XA are based on energy efficiency considerations with an eye towards climate change mitigation.”¹⁸³

¹⁷⁷ White Paper on Renewable Energy in Government Gazette No. 26169 of 2003 5.

¹⁷⁸ DME *Energy Efficiency Strategy of the Republic of South Africa* 2005.

¹⁷⁹ DME *Energy Efficiency Strategy of the Republic of South Africa* 8.

¹⁸⁰ SEA *State of Energy in South African Cities* 2020 46.

¹⁸¹ Draft Post-2015 Energy Efficiency strategy in Government Gazette No. 40515 of 2016.

¹⁸² *South Africa National Building Standards SANS 10400-XA* 2011.

¹⁸³ USAID 2011 https://www.climatelinks.org/sites/default/files/asset/document/2020_USAID_SA-LED_South-Africa-National-Building-Standards_SANS%2010400-XA_Fact-Sheet.pdf.

The above standards are the clearest examples of the potential for local government to reform the energy sector, especially in relation to electricity use. Energy efficiency is therefore a tool that local government can employ in order to reduce GHG emissions.¹⁸⁴

3.4.3 Renewable Energy Independent Power Producer Procurement Programme

Dovetailing with section 34(1) of the *Electricity Regulation Act*,¹⁸⁵ the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) was initially launched in 2011 by the Department of Energy (as it then was named, known now as the Department of Mineral Resources and Energy (DMRE)). In terms of this programme, the government facilitates bids for the production of renewable power including onshore wind, small hydro, biomass solar photovoltaic and so on from IPPs who could be large or small suppliers.¹⁸⁶ For example, there exists in this programme the Small Projects Independent Power Producers Procurement Programme which was advertised for the production of 50 MW in 2013.¹⁸⁷ This tendering has resulted in roughly 20 projects as at January 2017.¹⁸⁸

The REIPPPP has been lauded globally as a programme that facilitates the successful auction of renewable energy programmes.¹⁸⁹ It furthermore gives rise to competitiveness outside the monopoly which is held by Eskom, since IPPs can compete with the latter and among themselves as based on their capacities.¹⁹⁰ Consequently, the REIPPPP stands as a programme which could be streamlined through local government channels to facilitate renewable energy production at the local level.

¹⁸⁴ SEA *State of Energy in South African Cities 2020* 47.

¹⁸⁵ *Electricity Regulation Act*.

¹⁸⁶ Elsässer, Hickmann and Stehle 2018 *Case Studies in the Environment* 3; Fontana, Khumalo and Dladla 2021 <https://thelawreviews.co.uk/title/the-renewable-energy-law-review/south-africa>.

¹⁸⁷ Fontana, Khumalo and Dladla 2021 <https://thelawreviews.co.uk/title/the-renewable-energy-law-review/south-africa>.

¹⁸⁸ Fontana, Khumalo and Dladla 2021 <https://thelawreviews.co.uk/title/the-renewable-energy-law-review/south-africa>.

¹⁸⁹ Fontana, Khumalo and Dladla 2021 <https://thelawreviews.co.uk/title/the-renewable-energy-law-review/south-africa>. There have been reports that the program has stalled due to problems with load shedding and the uncertainty as to the future of energy in South Africa; SEA *State of Energy in South African Cities 2020* 66.

¹⁹⁰ Elsässer, Hickmann and Stehle 2018 *Case Studies in the Environment* 3.

3.4.4 The Risk Mitigation IPP Procurement Programme

Around 2020, the government sped up its commitments to climate-change mitigation as well as energy provision through the introduction of the Risk Mitigation IPP Procurement Programme (RMIPPPP).¹⁹¹ This programme came about due to the erratic nature of power delivery, with the result that the RMIPPPP was designed as a programme to cater for procuring almost 2000MW of emergency power.¹⁹² It was hoped that the project would “contribute towards socio-economic development and sustainable economic growth, while enabling and stimulating the participation of independent power producers in the electricity supply industry in South Africa”.¹⁹³ However, what is particularly significant about the RMIPPPP is that those who succeed in the bidding process will in future be able to enter into power purchasing agreements with Eskom for what is termed dispatchable power.¹⁹⁴

3.5 Conclusion

South Africa is well endowed with renewable energy sources that include wind, solar and hydro-power. Despite this presence of renewable resources, it seems that the existence of cheap oil resources stifles any potential investments in renewables. While the role of local government within the limited framework of renewable energy in South Africa seems to be limited, the potential for local government involvement can be imputed from a purposeful reading of local government laws, climate mitigation frameworks and broader energy laws.

¹⁹¹ Overview of the request for qualification and proposals for new generation capacity under the Risk Mitigation IPP Procurement Programme in Tender No: DMRE001/2020/21 of 2020.

¹⁹² Overview of the request for qualification and proposals for new generation capacity under the Risk Mitigation IPP Procurement Programme in Tender No: DMRE001/2020/21 of 2020, para 3.1; Fontana, Khumalo and Dladla 2021 <https://thelawreviews.co.uk/title/the-renewable-energy-law-review/south-africa>.

¹⁹³ Overview of the request for qualification and proposals for new generation capacity under the Risk Mitigation IPP Procurement Programme in Tender No: DMRE001/2020/21 of 2020, para 3.2.1.

¹⁹⁴ DMRE 2021 <https://www.gov.za/speeches/mineral-resources-and-energy-onpricing-projects-under-risk-mitigation-independent-power>. Also see Fontana, Khumalo and Dladla 2021 <https://thelawreviews.co.uk/title/the-renewable-energy-law-review/south-africa>.

4.1 Introduction

In 2020, SEA found that cities are now known as the drivers of large-scale energy efficiency initiatives; significant players in the deployment of renewable energy initiatives; as well as key partners in climate-change mitigation.¹⁹⁵ Whether this is true is the subject of this chapter. It will assess a few initiatives which demonstrate the extent to which local governments are taking their rightful place in the governance of climate mitigation as well as energy-sector reform. As noted in chapter 1, the two cities to be reviewed are the CCT and CoJ, among the highest emitters of GHG in South Africa.¹⁹⁶ These cities are also envisioned to see a rapid increase in migration which, in turn, would put further pressure on energy sources.¹⁹⁷

The analysis considers three key areas between the two cities: climate frameworks; energy frameworks; as well as the cities' IDP's relationship with both mitigation and energy-sector reform (because the IDP is a 5 year plan of the city's strategies and action plans).

4.2 City of Johannesburg

CoJ is unique in that it holds the distinction of being the "most advanced commercial city in Africa and the engine room of the South African and regional economy".¹⁹⁸ It has the highest population of people in South Africa, at over five million.¹⁹⁹ The exposition that follows will detail a number of contextual laws and policies relating to climate-change mitigation, energy and an intersection of both.

¹⁹⁵ SEA *State of Energy in South African Cities 2020* 1.

¹⁹⁶ Mokwena *Municipal responses to climate change in South Africa: the case of eThekwin, the City of Cape Town, and the City of Johannesburg* 2.

¹⁹⁷ Mokwena *Municipal responses to climate change in South Africa: the case of eThekwin, the City of Cape Town, and the City of Johannesburg* 2.

¹⁹⁸ COGTA *City of Johannesburg Metropolitan* 2020.

¹⁹⁹ COGTA *City of Johannesburg Metropolitan* 5; CoJ *City of Johannesburg Climate Action Plan* 12. It is also one of the most densely populated areas, Mokwena *Municipal responses to climate change in South Africa: the case of eThekwin, the City of Cape Town, and the City of Johannesburg* 24

4.2.1 Climate and energy laws/ policies/ strategies

4.2.1.1 City of Johannesburg Climate Change Strategic Framework 2015

In 2009, the CoJ produced a *Climate Change Adaptation Plan*²⁰⁰ in response to the fact that most actions and debates were overly concerned with mitigation.²⁰¹ The CoJ however developed a much broader framework which is meant to capture the city's vision in relation to climate change. As a result, the *Climate Change Strategic Framework*²⁰² was produced in 2015. The strategy's vision was to ensure that Johannesburg would be

a World Class African City of the Future – a vibrant, equitable African city, strengthened through its diversity; a city that provides real quality of life; a city that provides sustainability for all its citizens; a resilient and adaptive society.²⁰³

In an effort to fulfil this vision, the CoJ identified seven sectors which it envisioned to be crucial to streamlining engagements around climate change issues as well as economic interests. Of these, one is energy, where the city hopes to reach an optimal supply of renewable and conventional energy, while also ensuring energy efficiency.²⁰⁴ This was in part because the consumption electricity ranked highest among its emitting services.²⁰⁵

Some of the successes that can be traced in part to the strategy are the works of City Power Pty Ltd, which is wholly owned by the CoJ and is responsible for energy services. According to the strategy, demand-side management was started in terms of an Energy Demand Side Management Policy which encouraged consumers to reduce their electricity demands through provision of electricity as and when needed or through the use of a larger extent of energy-saving and renewable sources of energy.²⁰⁶ This project has seen material gains, although on a small scale.²⁰⁷ Furthermore, as of 2015, the city had saved over 100 tons of carbon dioxide by retrofitting five municipal buildings with energy

²⁰⁰ CoJ *City of Johannesburg's Climate Change adaptation Plan* 2009.

²⁰¹ CoJ *City of Johannesburg's Climate Change adaptation Plan* 1.

²⁰² CoJ *City of Johannesburg Climate Change Strategic Framework* 2015.

²⁰³ CoJ *City of Johannesburg Climate Change Strategic Framework* 20.

²⁰⁴ CoJ *City of Johannesburg Climate Change Strategic Framework* 15.

²⁰⁵ CoJ *City of Johannesburg Climate Change Strategic Framework* 22.

²⁰⁶ Monyei and Adewumi 2017 *Energy Policy* 3;
<https://www.joburg.org.za/Campaigns/Pages/Notices/2014%20Notices/Energy-Demand-Side-Management-Policy-for-.aspx>.

²⁰⁷ <https://www.joburg.org.za/Campaigns/Pages/Notices/2014%20Notices/Energy-Demand-Side-Management-Policy-for-.aspx>.

efficient lighting.²⁰⁸ This meant that the city then did not fully optimise Eskom's fossil-fuel powered energy. While these might seem like minimal benefits, over time, these and similar actions are bound to ease the transition to renewable energy. The benefit derived from the quite obvious fact that buildings have a long lifespan, with the result that investments of this kind in new buildings could have long-term cumulative positive effects.

Lastly, City Power produced a business plan document in 2020 detailing plans for embedded generation and energy storage, all of which are strategically suited to address climate mitigation through shifting from fossil-fuels to renewables.²⁰⁹ It remains to be seen whether this will succeed.

4.2.1.2 City of Johannesburg Climate Action Plan 2021

Produced in 2021, the CoJ's *Climate Action Plan*²¹⁰ is the latest in a number of strategies aimed at reforming the energy sector through local government. As with the 2015 *Climate Change Strategic Framework*, the vision of the *Climate Action Plan* is to have a world-class city which is underpinned by a sustainable, resilient and adaptive society.²¹¹ To this end, the plan responds to the need for planning if the CoJ is to transition to a low-carbon and competitive just economy.²¹² The CoJ's *Climate Action Strategy* has the vision of reaching a net-zero emissions target by 2050, with targeted goals starting from 2025, as shown in the table below:

Table 1, adapted from the CoJ's *Climate Action Plan*, 37.

²⁰⁸ CoJ *City of Johannesburg Climate Change Strategic Framework* 35.

²⁰⁹ The general discussion can be found in CP *Final Draft City Power Johannesburg (SOC) Ltd Business Plan 2020*.

²¹⁰ CoJ *City of Johannesburg Climate Action Plan 2021*.

²¹¹ CoJ *City of Johannesburg Climate Action Plan* 12.

²¹² CoJ *City of Johannesburg Climate Action Plan* 18.

Actions	2025	2030	2040	2050
Electricity generation	• 11.5% of commercial buildings & 5.5% of homes have renewables; • 18.5% of grid electricity from renewable sources.	• 15% of commercial buildings & 7.5% of homes have renewables; • 35% of grid electricity from renewable sources.	• 20% of commercial buildings & 11.5% of homes have renewables; • 35% of grid electricity from renewable sources.	• 20% of commercial buildings & 15% of homes have renewables; • 35% of grid electricity from renewable sources.
Building energy	• 5% upgraded to solar thermal; • 13% LED lighting; • 7% high-efficiency appliances in commercial buildings.	• 6% upgraded to solar thermal; • 21% LED lighting; • 10% high-efficiency appliances in commercial buildings.	• 20% upgraded to solar thermal; • 35% LED lighting; • 18% high-efficiency appliances in commercial buildings.	• 25% upgraded to solar thermal; • 50% LED lighting; • 25% high-efficiency appliances in commercial buildings.

The table reflects a plan tailored along the lines of the activities that contribute most to the high GHG emissions of the city. Renewables are at the centre of this city-level energy reform process and the city acknowledges that one of the ways through which the targets would be met is by mainstreaming climate risks in budgetary planning across the board.²¹³ The city also accepts that these targets are “ambitious”, since they rely on “bold, transformative actions within the direct control and/or influence of the City”.²¹⁴ This is where it gets interesting, because the city also has projections based on bold ambitious targets that are meant to describe the potential high point if the city goes beyond the bare minimum in addressing clean city-level energy reform.²¹⁵ These ambitious targets are expressed as follows:

Table 2, adapted from the CoJ’s *Climate Action Plan*, 37.

²¹³ CoJ *City of Johannesburg Climate Action Plan* 33.

²¹⁴ CoJ *City of Johannesburg Climate Action Plan* 38.

²¹⁵ CoJ *City of Johannesburg Climate Action Plan* 38.

Actions	2025	2030	2040	2050
Electricity generation	• 11.5% of commercial buildings & 5.5% of homes have renewables; • 18.5% of grid electricity from renewable sources.	• 20% of commercial buildings & 7.5% of homes have renewables; • 35% of grid electricity from renewable sources.	• 37.5% of commercial buildings & 15% of homes have renewables; • 57% of grid electricity from renewable sources.	• 55% of commercial buildings & 22% of homes have renewables; • 71% of grid electricity from renewable sources.
Building energy	• 10% upgraded to heat pumps or high-efficiency boilers; • 15% upgraded to solar thermal; • 40% LED lighting; • 30% of coal stoves switched to LPG or wood; • 20% high-efficiency appliances in commercial buildings.	• 20% upgraded to heat pumps or high-efficiency boilers; • 16% upgraded to solar thermal; • 43% LED lighting; • 32% of coal stoves switched to LPG or wood; • 31% high-efficiency appliances in commercial buildings.	• 60% upgraded to heat pumps or high-efficiency boilers; • 35% upgraded to solar thermal; • 85% LED lighting; • 70% of coal stoves switched to LPG or wood; • 53% high-efficiency appliances in commercial buildings.	• 100% upgraded to heat pumps or high-efficiency boilers; • 50% upgraded to solar thermal; • 100% LED lighting; • 100% of coal stoves switched to LPG or wood; • 75% high-efficiency appliances in commercial buildings.

It is no surprise that these targets have been described in the media as being overly ambitious. For example, it has been reported that the city's population is expanding more than the city can catch up with, such that energy demands will always be on the rise.²¹⁶ Furthermore, it is believed that the actual implementation of the goals might be difficult, with the result that only firm commitments would enable the city to reach its bare minimum targets.²¹⁷ As in the case of other new policies, it is too early to see the actual results of the Climate Action Plan, but it is certainly a plan in action: one which is led by local government and is seeking to regulate energy transformation through progressive action.

4.2.2 General energy and energy efficiency related laws or policies

4.2.2.1 City of Johannesburg's Climate Change Adaptation Plan 2009.

The CoJ's *Climate Change Adaptation Plan* speaks to the issue of increasing energy efficiency. First, there is an acceptance that the "key strategy

²¹⁶ Bega 2021 <https://mg.co.za/environment/2021-06-07-joburgs-new-climate-plan-described-as-overly-ambitious/>.

²¹⁷ Bega 2021 <https://mg.co.za/environment/2021-06-07-joburgs-new-climate-plan-described-as-overly-ambitious/>.

for the proposed adaptations related to the risk of increased energy demand due to increased temperature is to ensure that users become more energy efficient, in particular relating to space cooling and refrigeration, and that the supply stability is continually maintained and monitored.²¹⁸

To lead by example, the *Climate Change Adaptation Plan* states that the CoJ would seek to have its administrative buildings obtain a Green Star rating, which “stringently assesses not just energy consumption, but also water consumption, emissions, materials etc”.²¹⁹ Given that this commitment was made in 2009, there seems to be some noticeable efforts. For example, in line with the SANS 10400XA (National Building Regulations) the CoJ has produced the draft Green Building Policy which seeks advocates for the construction of low energy consuming buildings that would be powered in part by renewable energy sources.²²⁰ This objective is consistent with the CoJ’s objective of reaching a low to zero carbon footprint in relation to all new buildings in the city by the year 2030.²²¹ The CoJ has gone further by popularising this policy objective through various media, which could ensure that residents are aware of the city’s long term energy plan.²²²

4.2.2.2 Environmental Sustainability Strategy and Action Plan for the City of Johannesburg 2019

One of the premises on which the 2019 *Environmental Sustainability Strategy and Action Plan for the City of Johannesburg*,²²³ is that

the typical South African city has followed a **resource-intensive growth path**, and suffers from inefficiencies across sectors such as energy, water, waste, food, and transport. The energy mix is unsustainable, landfill sites are fast running out of airspace, freshwater

²¹⁸ CoJ *City of Johannesburg’s Climate Change adaptation Plan* 74.

²¹⁹ CoJ *City of Johannesburg’s Climate Change adaptation Plan* 74.

²²⁰ CoJ 2020 <https://bit.ly/3tZS8Uk>. There are also tentative efforts by the city to try and bring these changes to residential spaces as well. For example, it has been reported that “the City of Johannesburg hopes to achieve this by passing and implementing municipal bylaws that require property developments for middle- and high-income earners to be fitted with water solar heaters as a prerequisite for development approval”, Mokwena *Municipal responses to climate change in South Africa: the case of eThekwin, the City of Cape Town, and the City of Johannesburg* 24.

²²¹ CoJ 2020 <https://bit.ly/3tZS8Uk>.

²²² See for example comments here: https://www.joburg.org.za/media_/Pages/Media/Media%20Statements/2021%20Media%20Statements/March/City-launches-Climate-Action-Plan,-honours-Earth-Hour.aspx

²²³ CoJ *Environmental Sustainability Strategy and Action Plan for the City of Johannesburg* 2019.

resources are constrained, and greenhouse gas emissions are increasing [mainly from electricity generation....]²²⁴

The strategy then goes on to accept that the CoJ is a major GHG emitter, which creates a need for change.²²⁵ Consequently, the strategy sets out an action plan with a 2040 vision. For example, the action plan targets the reduction of GHG emissions through the development of a climate-change mitigation plan, while regularly checking the state of the city's GHG inventory.²²⁶ To achieve these objectives, the CoJ notes that it will be necessary to identify relevant partners and stakeholders in order to ensure that programmes involve those with expertise.²²⁷ The CoJ acknowledges that, for these actions to work, budgetary allocations will be necessary.²²⁸ The first steps to seeing through the objectives of this strategy were taken in October 2021 when the Mayor of the CoJ launched the Energy Sustainability Strategy, which aims at seeing

City Power transitioning from an electricity distribution company to an energy service provider. This means City Power is set to be a 'wires business' that will not only continue delivering conventional power, but will also cover distributed energy generation and energy storage facilities as its core business.²²⁹

The action plans are meant to ensure that the CoJ reaches its 2030 target of at least 35% renewable energy. Whether this goal will be reached can only be determined in time.

4.2.3 IDP provisions

4.2.3.1 City of Johannesburg IDP 2021-2026

The CoJ's *IDP 2021-2026*²³⁰ is the city's flagship and most recent governance tool and is resilience oriented, enjoys a 2040 growth and development strategy target plan and is anchored on four pillars: rebuilding, resilience, thriving and transformation.²³¹ The *IDP 2021-2026* takes a holistic approach which links the intersecting aspects of climate

²²⁴ CoJ *Environmental Sustainability Strategy and Action Plan for the City of Johannesburg* 2. Emphasis (bold) from original text.

²²⁵ CoJ *Environmental Sustainability Strategy and Action Plan for the City of Johannesburg* 21.

²²⁶ CoJ *Environmental Sustainability Strategy and Action Plan for the City of Johannesburg* 24.

²²⁷ CoJ *Environmental Sustainability Strategy and Action Plan for the City of Johannesburg* 31.

²²⁸ See below on the aspect of the IDP.

²²⁹ CoJ 2021
https://www.joburg.org.za/media_/Newsroom/Pages/2021%20News%20Articles/October/City-unveils-new-plans-to-wean-itself-from-Eskom.aspx.

²³⁰ CoJ *City of Johannesburg IDP 2021-2026* 2020.

²³¹ CoJ *City of Johannesburg IDP 2021-2026* 2.

mitigation and energy transformation. For example, it makes explicit reference to the CoJ's *Climate Action Plan* as the vehicle through which the city will pursue sustainability:

The City's Climate Action Plan (CAP) is a strategic plan with the objective to prioritise evidence-based transformational actions, to transition the City towards an emission neutral, climate resilience city by 2050. The CAP is a city-wide action plan to be actioned by the City administration (including the city's Municipal Entities), private sector, civil society, youth etc.²³²

Clearly, there are existing synergies between sector specific target goals and the overall integrated governance framework of the CoJ. To further bolster this, the *IDP 2021-2026* states definitive objectives. For example, the CoJ would seek to diversify the energy mix by 2040 to the extent that, by then, 50% of energy will be coming from renewable sources which could come from IPP or embedded generation.²³³ This can only be achieved through a move towards clean energy as well as maximising energy efficiency, all of which are tasked to be spearheaded by City Power.²³⁴

While there might be much more to say about the laws, policies and frameworks, the discussion above gives an overview of the way in which the CoJ is playing a role in the regulation of climate mitigation through energy-sector reform.

4.3 City of Cape Town

The CCT is located in the Western Cape province of South Africa with a population of over four million people making it the second largest in the country after Johannesburg and is therefore not surprisingly also the second largest economic hub in the country.²³⁵ The latest state-of-the-city report²³⁶ notes that over half of its GHG emissions emanate from electricity usage, which is directly traceable to coal-fuelled energy.²³⁷ However, the CCT hopes to achieve a net-zero carbon emissions by 2030 from all new buildings²³⁸ as well as carbon neutrality by 2050.²³⁹ Below is a brief itemisation and discussion of some documents that detail some of the CCT's plans.

²³² CoJ *City of Johannesburg IDP 2021-2026* 32.

²³³ CoJ *City of Johannesburg IDP 2021-2026* 117.

²³⁴ CoJ *City of Johannesburg IDP 2021-2026* 218.

²³⁵ COGTA *City of Cape Town Metropolitan* para 2.1; Pasquini *et al* 2015 *Climate and Development* 61.

²³⁶ CCT *State of Cape Town Report* 2020.

²³⁷ CCT *State of Cape Town Report* 30.

²³⁸ CCT *State of Cape Town Report* 30.

²³⁹ CCT *State of Cape Town Report* 30.

4.3.1 Climate and energy laws/ policies/ strategies

4.3.1.1 City of Cape Town Low-Carbon Central City Strategy 2014

CCT *Low-Carbon Central City Strategy*²⁴⁰ of 2014 accepted the vital role cities play and noted that these

have a strong influence over the spatial patterns of urban development that can make or break their carbon footprints; much more influence, in most cases, than national governments have. Cities can also have significant influence over the energy and emissions intensity of buildings, whether that energy is used for heating and cooling or for lighting, appliances and equipment. Pairing strategy and information that promotes these changes in a way that inspires individual action is key to unlocking a new approach towards reducing carbon emissions.²⁴¹

Essentially, this was a call to action, a recognition of the dire state the city was in and therefore fortunately presented definitive actions that would have to be undertaken. Given its state as a relatively dated strategy, the *Low-Carbon Central City Strategy* had, for example, targets set for 2020. One such target was to achieve at least 10% more renewable energy by 2020, while any new growth in electricity demand would be fulfilled through cleaner or renewable supplies.²⁴² However, it included long-term projections: for example, that all water heating would be energy efficient by up to 50% in residential spaces by 2030 or that all commercial or government buildings would be water-heating efficient by 2030 where solar would be the central power source.²⁴³

4.3.1.2 City of Cape Town Climate Change Policy 2017

The *CCT Climate Change Policy*²⁴⁴ accepts the role of cities in regulating for climate mitigation, observing that having “a clear climate change policy

enables the City to understand how to reduce and prepare for these risks (adaptation). The policy also enables all in the City to understand how Cape Town’s GHG emissions can be reduced (mitigation) in order to help slow down global climate change, while also benefitting from the consequent outcomes of improved air quality, reduced costs, energy security and improved health.”²⁴⁵

²⁴⁰ CCT *City of Cape Town Low-Carbon Central City Strategy* 2014.

²⁴¹ CCT *City of Cape Town Low-Carbon Central City Strategy* 13.

²⁴² CCT *City of Cape Town Low-Carbon Central City Strategy* 26.

²⁴³ CCT *City of Cape Town Low-Carbon Central City Strategy* 49.

²⁴⁴ CCT *City of Cape Town Climate Change Policy* 2017.

²⁴⁵ CCT *City of Cape Town Climate Change Policy* 7.

To address the obvious fact that the high carbon footprint stems from commercial and residential spaces powered by Eskom, one of the policy directions taken by the CCT was to employ the 2015 CCT's *Energy 2040 Vision and Associated Energy and Carbon Targets*.²⁴⁶ Also known as Energy2040, the *Energy 2040 Vision and Associated Energy and Carbon Targets*²⁴⁷ had the target of ensuring that, by 2040, reliance on coal energy would be diminished and shifted to reliance on embedded generation mainly from rooftop solar systems within commercial and residential buildings;²⁴⁸ that there would be around 525 000 solar water heaters on city rooftops;²⁴⁹ and that there would be a 40% reduction in carbon emissions, of which 21% would have been achieved through the employment of energy efficiency initiatives.²⁵⁰ These intersecting aims embody an indication that municipalities do not always regulate in fragmented ways but also through integrated ways. One way on which the CCT was putting these plans into action was by means of its Energy Security Game Changer programme through which the city went on a widescale campaign to have solar photovoltaic systems installed on rooftops.²⁵¹

4.3.1.3 City of Cape Town Climate Change Strategy 2021

The CCT's 2021 *Climate Change Strategy*²⁵² is the latest action framework for the city for dealing with climate change. With a 2050 vision timeline, one of the objectives is to ensure that there are clear guidelines on high-level planning, decision-making and project development in relation to climate change.²⁵³ However, the CCT is well aware of the politics of this process, noting that "addressing climate change in any city, but especially a city of high inequality like Cape Town, is as much political and economic as it is technical".²⁵⁴ While accepting that there is a goal to have the CCT being carbon neutral by 2050, the city clearly maintains a certain realism on the extent to which it can achieve this, since action is dependent on other players, too:

²⁴⁶ CCT *Energy 2040 Vision and Associated Energy and Carbon Targets* 2015.

²⁴⁷ CCT *Energy 2040 Vision and Associated Energy and Carbon Targets* 2015.

²⁴⁸ CCT *Energy 2040 Vision and Associated Energy and Carbon Targets* 18.

²⁴⁹ CCT *Energy 2040 Vision and Associated Energy and Carbon Targets* 19.

²⁵⁰ CCT *Energy 2040 Vision and Associated Energy and Carbon Targets* 22.

²⁵¹ The details can be found at <https://www.westerncape.gov.za/energy-security-game-changer/upgrade-grid-tied-solar-pv-system>.

²⁵² CCT *City of Cape Town Climate Change Strategy* 2021.

²⁵³ CCT *City of Cape Town Climate Change Strategy* 5.

²⁵⁴ CCT *City of Cape Town Climate Change Strategy* 5.

While the City acknowledges its responsibility to lead, drive, and enable a local carbon-neutral transition, achieving citywide carbon neutrality is not wholly within the control of the City administration. This transition requires action from other stakeholders, including national government, national utilities like Eskom and PRASA, the private sector, and residents.²⁵⁵

One could say this is a sobering point: that, as much as will and vision count, on-the-ground realities must not be ignored. This relates to the comments made about the CoJ's 2021 *Climate Action Plan*, which was described in the media as "overly ambitious",²⁵⁶ as indicated. In fact, the CCT acknowledges reaching carbon neutrality by 2050 to entail "a wholesale transformation of the way energy is supplied to Cape Town's economy" observing that "meeting these goals is highly contingent on the City of Cape Town being able to procure or generate its own renewable electricity with supply enabled by a functional framework involving regulatory, transmission and system operating stakeholders".²⁵⁷ This notwithstanding, a particularly welcome aspect of the *Climate Change Strategy* is that it connects the dots with the earlier mentioned *Amendments to the Electricity Regulations on New Generation Capacity*,²⁵⁸ in that it accepts that one of its pathways to pursuing renewable energy initiatives is the allowance now provided in section 4, where municipalities can apply directly to the Minister of Mineral Resources and Energy for a licence to procure or generate new generation capacity energy.

The CCT has gone further by tying the *Climate Change Strategy* to another new policy, the 2021 *Climate Change Action Plan*,²⁵⁹ which has as one of its action plans the fostering and promotion of carbon accounting and carbon-neutral quality assurance for the purposes of supplying carbon-neutral goods or services.²⁶⁰ In other words, this would be a city-level monitoring pathway which could form the context and basis upon which mitigation measures are pursued and renewables sought. While there is no guarantee that this would work, it represents proactivity on the part of the city. In fact, the CCT acknowledges that the pathway to mitigating climate change as well as reforming the energy sector will require "governance and regulation" as well as strategic collaborations

²⁵⁵ CCT *City of Cape Town Climate Change Strategy* 16.

²⁵⁶ Bega 2021 <https://mg.co.za/environment/2021-06-07-joburgs-new-climate-plan-described-as-overly-ambitious/>.

²⁵⁷ CCT *City of Cape Town Climate Change Strategy* 17.

²⁵⁸ Amendments to the Electricity Regulations on New Generation Capacity in Government Gazette 42810 of 2020.

²⁵⁹ CCT *City of Cape Town Climate Change Action Plan* 2021.

²⁶⁰ CCT *City of Cape Town Climate Change Action Plan* 28.

and partnerships. PPA and contracts with IPP come into play, and they could be usefully employed by the CCT in its regulatory role.

4.3.2 General energy and energy efficiency related laws or policies

4.3.2.1 Cape Town Energy and Climate Change Strategy 2006

It has been reported that the CCT was the first city to adopt a climate change policy through the adoption of its *Energy and Climate Change Strategy*.²⁶¹ This strategy came about as a result of the realisation that it could not simply be a bystander in the effort to mitigate climate change and promote the use of renewables.²⁶² Rather, the CCT chose a city-level proactive approach. CCT was therefore one of the first municipalities to enter into an agreement with an IPP called the Darling Wind Farm, which was also South Africa's first commercial wind farm.²⁶³ Furthermore, statistics at the time illustrated that Cape Town had the largest percentage of renewable energy supplies within the broader South African space.²⁶⁴ While this success story represents regulatory innovation on the part of the city, it could be labelled as dated (over 15 years). This notwithstanding, the pioneering aspect of the venture confirms that some local governments have always been involved, albeit in small measure, in efforts to transition to renewable energy within their localities.

The CCT made another effort around energy and climate change by adopting its *Action Plan for Energy and Climate Change*,²⁶⁵ colloquially labelled the "Moving Mountains Document". Adopted in 2011, the *Action Plan for Energy and Climate Change* was managed by the city's Energy and Climate Change Unit, which has jurisdiction across all directorates and departments. On paper, the *Action Plan for Energy and Climate Change* has been successful in one or two important respects. For example, there was a drive to push consumers and industry to engage in energy-efficiency practices such as solar water heating.²⁶⁶ There is also provision for new buildings to be energy efficient with the

²⁶¹ CCT *Cape Town Energy and Climate Change Strategy* 2006; Pasquini *et al* 2015 *Climate and Development* 61.

²⁶² CCT *Cape Town Energy and Climate Change Strategy* 9.

²⁶³ CCT *Cape Town Energy and Climate Change Strategy* 11.

²⁶⁴ CCT *Cape Town Energy and Climate Change Strategy* 11

²⁶⁵ CCT *Cape Town's Action Plan for Energy and Climate Change* 2011.

²⁶⁶ CCT *Cape Town's Action Plan for Energy and Climate Change* 20.

guidelines of a *Green Building Handbook*.²⁶⁷ At the time, it noted that “in the past two years, the City has retrofitted 11 000 street lights and 7 000 traffic lights, with resulting energy savings of 4 321 MWh per annum”.²⁶⁸ Given that a claim can be made that these could be old statistics, a look at the website of the CCT shows that there are sites that detail instructions for consumers to install solar PV systems, while also noting that before this could be done, a client must register with the city.²⁶⁹

4.3.3 IDP provisions

4.3.3.1 City of Cape Town IDP 2017-2022

The CCT’s *IDP 2017-2022*²⁷⁰ is made up of two parts: a strategic plan with the city’s long term vision as well as an implementation plan.²⁷¹ The IDP acknowledges the contextual setting within which cities find themselves: that they consume most of the global energy and that they are responsible for up to 70% of the global GHG emissions.²⁷² The IDP comes full circle by acknowledging the CCT’s energy-efficiency efforts, which include “energy-efficiency measures for its street and traffic lighting, energy-efficiency retrofits for buildings”.²⁷³ Interestingly, these and other efforts, according to the IDP, has seen the CCT save up to 75 000 Mwh of electricity and 75 000 tonnes of carbon dioxide.²⁷⁴ These are considerable numbers when considered from a climate mitigation perspective. The *IDP 2017-2022* then takes the discussion further by noting that one of the ways it will need to diversify its electricity supply is through entering into agreements with IPP on large-scale renewable energy supplies, in part by leveraging the opportunities presented through the REIPPP.²⁷⁵ These developments are all in line with, for example, the CCT’s *Climate Change Strategy* and the *Energy and Climate Change Strategy*. The *IDP 2017-2022* sets targets for the use of embedded power through solar photovoltaic systems,²⁷⁶ something which is advocated for in the *Action Plan for Energy and Climate Change*.

²⁶⁷ CCT *Cape Town’s Action Plan for Energy and Climate Change* 21.

²⁶⁸ CCT *Cape Town’s Action Plan for Energy and Climate Change* 22.

²⁶⁹ Details available at <https://www.capetown.gov.za/Family%20and%20home/Greener-living/Saving-electricity-at-home/going-solar>.

²⁷⁰ CCT *City of Cape Town IDP 2017-2022, as amended* 2021.

²⁷¹ CCT *City of Cape Town IDP 2017-2022, as amended* 14.

²⁷² CCT *City of Cape Town IDP 2017-2022, as amended* 18.

²⁷³ CCT *City of Cape Town IDP 2017-2022, as amended* 49.

²⁷⁴ CCT *City of Cape Town IDP 2017-2022, as amended* 49.

²⁷⁵ CCT *City of Cape Town IDP 2017-2022, as amended* 92.

²⁷⁶ CCT *City of Cape Town IDP 2017-2022, as amended* 92

Another important aspect is that the CCT established a Sustainable Energy Markets Department in 2017 to manage energy transition.²⁷⁷

Overall, it is clear that, in so far as energy is concerned, the *IDP 2017-2022* is in line with the other climate mitigation and energy reform-oriented laws and policies.

4.4 Conclusion

The CoJ and the CCT are two large metropolitan municipalities that are strategically placed to lead the way in aspects that have to do with the role of local government in climate mitigation through energy-sector reform. The analysis undertaken in this chapter reveals that the cities have realised their duty around playing a role in mitigation, and they all openly acknowledge that the reliance on Eskom-powered fossil-fuel energy is part of the problem as to why GHGs are high in their jurisdictions. It is for this reason that the cities have taken city-level steps in seeking energy sector reform. In the subsequent and final chapter, these efforts will be synthesised in an effort to reflect on the state of energy sector reform within cities.

²⁷⁷ CCT *State of Cape Town Report* 30.

5.1 Findings

South Africa is heavily reliant on Eskom's fossil-fuel powered electricity. This has ultimately contributed to the country having one of the highest GHG emissions on the continent. The situation is not no different in cities, especially bigger metropolitan cities. Yet what remains true is that there is ultimately a need to mitigate against climate change. Thus, if it is not a secret that Eskom's fossil-fuelled power is to blame, then there is definitely a need for some reform. As a result, the study sought to review the role of local government in the regulation of climate-change mitigation through energy-sector reform.

Chapter 2 sought to find the intersecting links between local government powers, climate-change mitigation and the provision of energy. The chapter found that local government has a constitutional duty to pursue what is termed "developmental local government", which entails ensuring that the provision of services to communities mirrors or is informed by developmental imperatives. This finding leads to the conclusion that climate mitigation and energy-sector reform are aspects in which local government could be involved by means of developmental local government, especially considering that the outcome of mitigating climate change and reforming the energy sector are all centred on sustainability. The discussion also showed that, apart from the South African perspective on this, international frameworks exist that recognise a place for local government in mitigation and energy reform. Some of these include Agenda 21. The study concluded by noting that some amendments to the electricity laws have now created room for local government involvement in relation to new generation capacity for as long as they are in a financial position to do so.

Chapter 3 explored renewable energy as it pertains to South Africa. The chapter found that South Africa is replete with renewable energy sources like wind and the sun, yet the state has openly acknowledged that there is not enough investments in renewables. The potential for energy-sector reform is thus extant but the dominance, availability and cheapness of coal continues, for the foreseeable future, to trump this fact. The As indicated, Government has a White Paper on Renewable Energy which captures the state's vision of moving towards energy security through the diversification of sources. Renewables are envisioned to lead this transformation. The chapter concluded by finding

that there innovative approaches have been taken by the government to try and ensure that there are renewable energy producers. One of these include the REIPPP, which allows IPPs to tender for the chance to produce renewable energy. IPPs often enter into agreements with municipalities. The overall conclusion is that South Africa does have an enabling framework which could allow for renewable energy to slowly take off.

Chapter 4 explored city-level energy-sector reform. The chapter undertook this exploration through an analysis of the frameworks for climate mitigation and energy sector diversification within the CoJ and the CCT. The discussion straddled three frameworks: climate, energy, and IDPs, the latter being documents meant to operationalise municipal policies. The discussion undertaken leads to the conclusion that these two local governments are in fact playing a role in the regulation of climate mitigation through energy-sector reform. In CoJ, through its *Climate Change Strategic Framework*, over 100 tons of carbon dioxide were saved by proactively light-retrofitting government buildings as an energy efficiency strategy. Through its 2021 *Climate Action Plan*, the CoJ seeks to reach a net-zero emissions target by 2050, as indicated. Its *Climate Change Adaptation Plan*, takes a page from the National Building Regulations in that it has produced its own draft Green Building Policy, by means of which it aims at a zero to low carbon footprint for new buildings by 2030. By means of its *Environmental Sustainability Strategy and Action Plan*, CoJ is setting up City Power to transition from an energy distributor to an energy service provider with at least 35% reliance on renewable energy by 2030. The CoJ's *IDP 2021-2026* synergises these various goals and efforts and goes further in terms of targets aiming at 50% renewable energy from embedded generation of IPP by the year 2040.

The CCT has also made strides around assuming its role of regulating for climate mitigation through energy sector transformation. For example, after the production of its *Low-Carbon Central City Strategy* a few years back, it developed a development guideline entitled *Energy2040*, which would provide guidance on the way in which its projects seek to lower GHG emissions while promoting sustainability. Linked to *Energy2040* is the CCT's *Climate Change Policy*, which enjoys, as indicated, 2040 targets of 525 000 solar water heaters on roof tops. To ensure that this will work, the CCT offers detailed guidelines on its website. Furthermore, by means of its *Climate Change Strategy*, the CCT seeks to be carbon neutral by 2050, and one of the ways in which this would be measured is by

means of carbon accounting and carbon-neutral quality assurance. Through its *Action Plan for Energy and Climate Change*, the CCT envisions to have energy-efficient buildings with guidelines set by its *Green Building Handbook*, another page taken from the National Building Regulations. As in the case of the CoJ, the CCT's *IDP 2017-2022* also comes full circle by synthesising its various relevant documents for a fully integrated plan. The *IDP 2017-2022* engages IPP programmes such as the REIPPP as a pathway to the future.

5.2 Recommendations

The following recommendations (in no order of importance) are not necessarily meant for the CoJ and CCT only, but are structured in general terms for potential use also in other local government entities.

- There must be more expansive municipal efforts at retrofitting residential or commercial buildings.
- Municipalities must employ experts and liaise with experts to see through the actual practical implementation of plans. This could be aligned with performance indicators for departments or staff.
- If local government is indeed going to play a key role in climate mitigation through energy-sector reform, it must plan and budget for renewable energy projects in its IDPs.
- Municipalities, as part of government, must be encouraged to make use of greening budgets to achieve their goals of mitigating the effects or risks of climate change.
- Municipalities must diversify their finances so that they are not heavily reliant on Eskom-distributed electricity. They must ideally seek to self-fund. If this happens, it might open up funding avenues for larger investments in renewables.
- Cities must increase awareness about solar water-heater systems and solar photovoltaic systems.
- Cities must fast-track embedded generation (or distributed generation) and consider this to be a priority.

5.3 Concluding remarks

The overall GHG emission profile of South Africa is composed of the totality of cities' GHG emissions. Cities are thus significant players in the effort to mitigate climate change through reforming the energy sector. This study has confirmed this and has shown that cities are indeed proactive in this regard. Resolute and devoted political leadership have been found, concomitant with good climate-change mitigation and general sustainability considerations, in the CCT. This confirms what scholars have demonstrated, that "senior political leadership can bring about rapid change in a municipality in terms of climate mainstreaming and, importantly, can lead to a coordinated approach by bringing municipal officials together across internal divisions".²⁷⁸ This suggests that energy-sector reform will be politically driven (both nationally and locally), with the consequence that weak politics or uncertainty in politics will derail such reform.

In the end, the sustainability destiny of cities lies in their own hands. Cities have the powers to regulate, and they can be innovative around mitigating against climate change through energy-sector reform. As long as there is political buy-in, sufficient resource allocation and knowledgeable personnel, the good works which the CoJ and the CCT are doing could reap long-term positive rewards, while inspiring other municipalities whether they are big or small.

²⁷⁸ Pasquini *et al* 2015 *Climate and Development* 62.

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