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Western Cape Government Green Economy Report 2017

WESTERN CAPE GOVERNMENT

GREEN ECONOMY REPORT 2017

Western Cape Government
Environmental Affairs & Development Planning

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ABOUT THIS REPORT

This is the fourth Western Cape Government (WCG) Green Economy Report. This report aims to: **i)** provide stakeholders with a solid basis for assessing the Western Cape Government's work in the green economy; and **ii)** contextualise the WCG policy and strategy response to the green economy. The report:

- Identifies the green economy issues that are most material to the Western Cape, focusing on the role for provincial government specifically; and
- Prioritises report topics in line with the Green is Smart Strategy Framework and the Western Cape Green Economy Indicators.

The scope of this report covers work undertaken and progress achieved under the WCG Green is Smart Strategy Framework for the financial year beginning on 1 April 2016 and ending on 31 March 2017. This was the fourth year of targeted Green Economy (GE) projects in the Western Cape.

Due to the nature of the data that is required for the Western Cape Green Economy Indicators, there is a reporting lag of at least one year for most of the indicators. Most of the sector data is for the 2015 and 2016 calendar year; where this is not the case, the relevant year is provided. The WCG Department of Environmental Affairs and Development Planning (DEA&DP), Chief Directorate: Environmental Sustainability would like to acknowledge all colleagues and stakeholders who have contributed to this report.

ACKNOWLEDGEMENTS

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LIST OF ABBREVIATIONS

ACRABE	Alien Clearing, Restoration and Biomass Economies
AMEU	Association of Municipal Electricity Utilities
BSP	Biodiversity Spatial Plan
CBD	Central Business District
CCT	City of Cape Town
CEA	Controlled Environment Agriculture
COD	Commercial Operations Date
CoP	Community of Practice
CSP	Concentrated Solar Power
DEA&DP	Department of Environmental Affairs and Development Planning
DEDAT	Department of Economic Development and Tourism
DOA	Department of Agriculture
DOHS	Department of Human Settlements
DOLG	Department of Local Government
DOTP	Department of the Premier
DTI	Department of Trade and Industry
DTPW	Department of Transport and Public Works
EDP	Western Cape Economic Development Partnership
EIA	Environmental Impact Assessment
EOP	Early Operations Period
EPWP	Expanded Public Works Programme
GDP	Gross Domestic Product
GEWG	Green Economy Working Group
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GMC	Greenest Municipality Competition
HIP	Halaal Industrial Park
HOD	Head of Department
ICT	Information and Communications Technology
IDZ	Industrial Development Zone
IPP	Independent Power Producers
LNG	Liquified Natural Gas
MERO	Municipal Economic Review and Outlook
MIR	Market Intelligence Report
MRF	Materials Recovery Facility

NPO	Non-Profit Organisation
OECD	Organisation for Economic Development and Cooperation
PERO	Provincial Economic Review and Outlook
PSG	Provincial Strategic Goal
PSP	Provincial Strategic Plan
PT	Provincial Treasury
PV	Photovoltaic
R&D	Research and Development
RE	Renewable Energy
REIPPPP	Renewable Energy Independent Power Production Procurement Programme
SALGA	South African Local Government Association
SAQA	South African Qualifications Authority
SARETEC	South African Renewable Energy Technology Centre
SEZ	Special Economic Zone
SoEOR	State of Environment Outlook Report
SSEG	Small Scale Embedded Generation
WCCCRS	Western Cape Climate Change Response Strategy
WCG	Western Cape Government
WCWSS	Western Cape Water Supply Strategy
WEF	World Economic Forum
WISP	Waste Industrial Symbiosis Programme
WMA	Water Management Area

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1 INTRODUCTION

IMAGE SOURCE: Vulcan Wildfire Management
Knysna Wildfire Disaster Report

This report covers what was a tumultuous period over 2016/17, both in South Africa and around the world. Internationally there was a marked upsurge in natural disasters and average temperatures, which unfortunately did not stem the United States' withdrawal from the Paris agreement. At the same time, the period saw a continued right-wards drift in European politics, much of it in response to sustained high levels of in-migration of refugees from the middle east into the region.

Overall there was a steady recovery of the global economy that featured the rise in prominence of disruptive technologies such as Tesla's electric cars and home power storage options as well as alternative currencies like Bitcoin. At the same time, the year saw a major regional milestone in the end of the Mugabe era in Zimbabwean politics which has given hope to the revival of the Zimbabwean economy to many of its citizens in the diaspora.

There is no doubting the fact that 2017 has been unprecedented in terms of the intensity and unpredictability of climate change impacts that have occurred across the globe. Amongst others, these included Hurricane Irma and Maria in the USA and the Caribbean as well as Hurricane Harvey in the USA. The impact and significance of these natural disaster occurrences is highlighted in the World Economic Forum's (WEF) Global Risks Report of 2017, where environmental risks feature within the top five risks globally in terms of impact and likelihood[1]. The top global risk in terms of likelihood is listed as "extreme weather events", whilst the third most likely risk is listed as "major natural disasters." For the first time in a decade, three environmental risks appeared in the WEF's top five global risks in terms of impact. These include: **i)** extreme weather events (2nd position); **ii)** major natural disasters (4th position); and **iii)** failure of climate-change mitigation and adaptation (5th position).

At the national level the Rand's downgrade to junk status by the three major ratings agencies stood out as a momentous event which has contributed to far slower growth than the global average over the period. This was coupled with doggedly high unemployment rates and persistent, pervasive inequality which must be viewed as key challenges for the country's outlook.

1 The Global Risks Report 2017: 12th Edition. 2017. World Economic Forum. Accessed from: http://wef.ch/risks2017

At the provincial level surely the most central issue must be the impact of what is widely regarded as the worst drought in living memory across the Western, Northern and Eastern Cape. The impact of the drought on the agricultural sector as well as the national impasse with regards to signing off renewable energy Independent Power Producers (IPPs) have both had a significant impact on two key sectors in the economy overall and the green economy in particular. The Western Cape has also had to endure the ravages of the Garden Route fires that displaced thousands and destroyed numerous formal and informal dwellings, in addition to the decimation of the poultry industry that accompanied a province-wide outbreak of Avian flu.

Given this uncertain setting the importance of a sustained commitment to the transition to a green economy both in the Western Cape and in the country cannot be overstated. For many in the country, and for residents of the Western Cape, developing innovative mechanisms to achieve both Provincial Strategic Goal 1: Creating opportunities for growth, and Provincial Strategic Goal 4: Enabling a resilient, sustainable, quality and inclusive living environment, is clearly being defined as an imperative. We look forward to continuing to build on our partnerships with civil society and the private sector to make sure this becomes a reality.

1.1 POLICY SHIFTS IN SOUTH AFRICA

In South Africa, the national budget speech for 2017 was tabled in February by the then Minister of Finance, Pravin Gordhan. In his speech, Gordhan expected the country's GDP growth to increase to 1,3% in 2017. However, this figure was later revised to 0,7% actual growth for the year. This bleak economic situation - coupled with South Africa's rising unemployment and decreasing GDP - are a risk to the national, provincial and local fiscus (Figure 1).

Figure 1: Unemployment and GDP trends in South Africa (Source: OECD, Economic Outlook database 2017).

The Organisation for Economic Cooperation and Development (OECD) – in their economic overview of South Africa in 2017 – have identified various policy constraints to economic growth in the country (OECD, 2017). These include:

- Macroeconomic policies are constrained, fiscal space is limited and higher interest payments push public debt up.
- Skills shortages and mismatches are bottlenecks to growth and inclusiveness.
- Access to higher education remains limited.
- Labour disputes are costly and create a barrier to hiring.
- Red tape and licensing create large burdens for entrepreneurs and small firms. The minimum wage risks adding to the hiring costs faced by small businesses.
- The regulation of network services and sectors – such as telecommunications, energy, transport and services sectors – remains high, thus affecting quality and prices, and reducing job creation.

1.2 AN INCLUSIVE AND SUSTAINABLE ECONOMY

It is widely held that necessity is the mother of invention and necessity has certainly resulted in quite a lot of invention in the South African context in the recent past. Disruptions in both electricity and water supplies have resulted in a high level of adaptation from many actors in the private sector, with many firms developing private supplies of both of these inputs. Persistently sluggish growth of the economy has resulted in rapidly increasing process efficiency across a range of industries. This is being further stimulated by the national target of 20% landfill diversion by 2019[2] which is pressuring businesses to engage more proactively in platforms such as the Western Cape's innovative Waste Industrial Symbiosis Programme (WISP).

Factors such as these have great potential to help develop a resilient economy by supporting diversity and by broadening supplier participation, but they require significant investment to actualize. Fortunately impact investment and thematic investment in sectors such as water, energy and agriculture in South Africa continues to expand[3] (Bertha, 2017) and state-led initiatives such as the City of Cape Town's first Green Bond which raised a Billion Rand for green energy, transport and water related projects in 2017 reflect some of the innovative thinking and investment potential that the green economy has to offer.

1.3 PROVINCIAL ECONOMIC REVIEW AND OUTLOOK

The Provincial Economic Review and Outlook (PERO) and the Municipal Economic Review and Outlook (MERO) are annual publications that provide insights into sector trends and developments within the economy.

While the Western Cape economy fared better in terms of growth than the national average over the 2016/17 period, the Western Cape is not immune to developments on a national level and the gap between the province and the national average has diminished. Accordingly, increasing investment in green economy related initiatives couldn't come at a more pertinent time either, as the impact of the drought starts to bite into both the region's Gross Domestic Product (GDP) and employment figures.

2 https://www.greencape.co.za/assets/Uploads/GreenCape-Waste-MIR-2017-electronic-FINAL-v2.pdf
3 http://www.gsb.uct.ac.za/files/Bertha_ImpactBarometer4.pdf

The agricultural, agri-processing, tourism and construction sectors which have been strong growth sectors for previous reporting periods have taken a knock at the tail end of 2017 due to the drought. Targeted investment in these sectors in particular is needed to help farmers transition to more climate resilient agriculture, as well as to develop resource efficient construction and tourism sectors that protect revenue and jobs.

The Western Cape's largest GDP contributor (finance, insurance, real estate and business services sector) is a fairly drought-resistant sector and there is much potential for expansion in resource efficient Business Process Outsourcing in particular. In addition to this, the Department of Trade and Industry (DTI) has given its support for the designation of Atlantis as a Special Greentech Economic Zone, having already attracted some R680 million in renewable energy investments.

An economic approach which includes capitalising on strengths, focusing on driving economic opportunities - for example within the manufacturing, export, agri-processing, tourism, Information and Communications Technology (ICT) sectors - and instilling business confidence remains key to enhancing growth in the Province. It should also consider major economic development initiatives undertaken by the South African Government which has an impact on the Western Cape regional economy namely Operation Phakisa, the Industrial Development Zones (IDZ) program, the Special Economic Zones (SEZ) and the Agri-Park Programme.

IMAGES SOURCES:
GreenCape • James-Brent Styan
James Puttick • Western Cape Government: Department of Agriculture

2 WESTERN CAPE GOVERNMENT: GREEN ECONOMY STRATEGY UPDATE

IMAGE SOURCE: Western Cape Government
Langrug, Genius of SPACE

2.1 GREEN IS SMART: STRATEGY IMPLEMENTATION

The Western Cape Green Economy Strategy Framework ("Green is Smart") is now in its fourth year of implementation (WCG, 2013) and serves as the province's roadmap to becoming the leading green economic hub on the African continent. This strategy is being driven through the Green Economy Working Group (GEWG) that forms part of the Provincial Transversal Management System. The GEWG consists of representatives from various departments and organisations with responsibilities and mandates that relate to the green economy in the Western Cape. Specifically, the GEWG constitutes representatives from: **i)** Department of Environmental Affairs and Development Planning (DEA&DP); **ii)** Provincial Treasury (PT); **iii)** Department of Transport and Public Works (DTPW); **iv)** Department of Economic Development and Tourism (DEDAT); **v)** Department of Agriculture (DOA); **vi)** Department of the Premier (DOTP); **vii)** Department of Local Government (DOLG); **viii)** Department of Human Settlements (DOHS); **ix)** GreenCape; **x)** City of Cape Town (CCT); and **xi)** Western Cape Economic Development Partnership (EDP).

According to the Terms of Reference for the GEWG, the objectives of this structure are to:

- Provide an effective mechanism for engagement and transparency between provincial government departments regarding initiatives within the green economy space;
- Identify and provide strategic advice on key issues pertaining to the green economy within the Western Cape;
- Provide strategic advice on the monitoring and evaluation of existing green economy policies, and the development of any future policies;
- Identify actions and interventions required by key stakeholders to develop a more productive and competitive green economy in line with the objectives of the Green Economy Strategy Framework;
- Coordinate and align strategic priorities for consideration by the respective departments, as informed by the governmental planning cycle and associated budgeting processes;

- Support green economy data management and establishment;
- Report on the progress of the Green Economy Strategic Priority projects;
- Report on progress to the Heads of Departments (HOD) via the Green Economy HOD Committee;
- Track progress of projects and provide the necessary support as and where relevant; and
- Make mandated decisions with respect to transversal projects, and/or provide recommendations for decision-making to the Green Economy HOD Committee.

2.2 PROVINCIAL GAME CHANGERS

The Green Economy falls under Provincial Strategic Goal 1: "Create opportunities for growth and jobs" as well as Provincial Strategic Goal 4: "Enable a resilient, sustainable, quality and inclusive living environment" in the WCG's transversal management approach. The Provincial Strategic Plan (PSP) 2014-2019 lists various "Game Changers" within each of the province's PSGs. Those listed in PSG1 and PSG4 are further described below.

GAME CHANGERS IN PSG1: CREATE OPPORTUNITIES FOR GROWTH AND JOBS

Project Khulisa: Grow the economy and create jobs in priority sectors

Project Khulisa is an initiative of the Western Cape Government that seeks to maximise employment opportunities over a five year period. Three priority sectors where employment opportunities will be maximised include: **i)** agri-processing; **ii)** tourism; and **iii)** oil and gas services.

Energy security for the Western Cape business and investment growth

This Game Changer seeks to deliver on a more energy secure province by focusing its attention on: **i)** mitigation of load-shedding; **ii)** installation of business and household rooftop PV that also feeds into municipal grids; **iii)** promotion of efficient energy usage, particularly in government buildings; and **iv)** developing a large scale independent power producer agreement to introduce a new energy source to the Western Cape, specifically the lower carbon Liquefied Natural Gas (LNG). As the provincial government does not have the constitutional mandate to generate electricity itself, collaboration and co-operation with local governments – who have a mandate to distribute electricity – is essential.

Build an appropriately skilled workforce

The Western Cape Government will focus on promoting artisanal and technical skills within the province. These skills will focus on meeting the needs of the priority sectors as outlined in the Project Khulisa game changer i.e. agri-processing, tourism and oil and gas services. Skills will be aligned to meet the demands of business within the priority sectors. In addition, there will be a focus on both: **i)** the educational foundation to ensure that students enter vocational training; and **ii)** practical training through work placement.

GAME CHANGERS IN PSG4: ENABLE A RESILIENT, SUSTAINABLE, QUALITY AND INCLUSIVE LIVING ENVIRONMENT.

Better Living Model

This Game Changer seeks to change the legacy of apartheid spatial planning that continues to pervade many cities and towns in the Western Cape. This spatial planning legacy has resulted in a severe shortage of well-located housing for low-income residents, where access to economic and social opportunities is limited. As such, the Western Cape Government has decided to address this problem

by identifying well-located, immovable property that can be leveraged to create mixed-income and multi-use neighbourhoods and communities. One of the prototype projects for the Better Living Model has been the development of the former Conradie Hospital Site in Cape Town.

Click here to view the Better Living Model website.

Project Khulisa interventions

The first phase of Project Khulisa, which runs until 2019, will focus on what both government and the private sector can do together to improve job growth and creation in three key sectors, namely: **i)** agri-processing; **ii)** tourism; and **iii)** oil and gas. Below is a synopsis of the select achievements in each of these key sectors during the 2016/2017 financial year.

Agri-processing

The pre-feasibility study for the Halaal Industrial Park (HIP) has been completed (Phase 1). Phase 2 will be completed during the 2017/2018 year. Investor prospectuses are being developed for each of the recommended sites that have been identified for the development of the HIP, as well as a general prospectus for the Halaal industry. In addition, several companies were taken to strategic markets - such as Thailand, Indonesia, India, Singapore and Malaysia – to increase halaal exports from the Western Cape. Progress has been made in the development of a Global Best Practice Halaal Certification for companies.

The Western Cape's Department of Economic Development and Tourism and Department of Agriculture, along with Wesgro and Wines of South Africa, implemented a project entitled, "Wine Export Promotion to Angola and China." In Angola, in-store wine tastings and promotions of South African wines were conducted. In China, various black-owned wine brands were invited to participate in the country's Wine Expo, which enabled these brands to gather market intelligence and showcase their brands.

A Supplier Development programme - aimed at Small and Medium Enterprise owners in the agri-processing sector – was undertaken. The programme sought to assist business owners with addressing market opportunities, compliance requirements and improving efficiencies to scale up enterprises and better position them for growth. The programme focused on increasing the entrepreneurial aspects of the various businesses by: **i)** identifying business constraints; **ii)** developing action plans or turnaround strategies for implementation; and **iii)** providing mentorship and coaching to assist the business owner.

Tourism

The Tourism Destination Marketing programme saw 14 initiatives supported during the 2016/2017 financial year, with a total economic value of approximately R162 million. The aim of these initiatives was to drive the geographic spread of economic growth, create job opportunities and lessen the effect of seasonality across the Province. This programme was supported by Wesgro's identification of promotional opportunities that have a measurable impact on the Province in terms of visitor spend.

A cycle route from Cape Town to Plettenberg Bay - the Cross Cape cycle route - has been mapped, and an audit of cycle-friendly accommodation along the route has been completed.

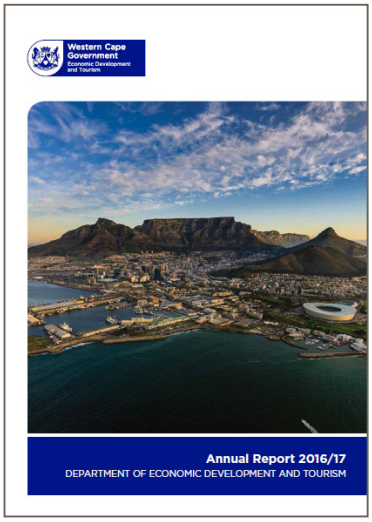
Click here for more information about this route.

Oil and gas

In terms of progress on the Saldanha Industrial Development Zone, the construction of internal bulk services, the waste water treatment works and the supply hub in the Port has been completed. The link bridge to the Port and the water reservoir are under construction, whilst the port land development is in the design phase.

For more information, visit:

Click here:
Project Khulisa



Click here:
Western Cape Department of Economic Development and Tourism Annual Report 2016/2017

2.3 GREENCAPE

GreenCape is a Non-Profit Organisation (NPO) that was established in 2010 as a partnership arrangement between the Western Cape Government, the City of Cape Town and Wesgro. GreenCape works with businesses, investors, academia and government to unlock the investment and employment potential of green technologies and services within the Western Cape. As such, GreenCape plays a significant role in driving the widespread adoption of economically viable green economy solutions within the province.

Table 1: Sectors that GreenCape focuses on.

SECTORS THAT GREENCAPE FOCUSES ON	
Gas	Water
Waste	Renewable energy
WISP	Energy services
Bioeconomy	Green finance
Sustainable agriculture	Atlantis SEZ

Click in table above to read more.

GreenCape acquires and disseminates knowledge across various sectors within the green economy, with designated experts and professionals working within these sectors. As a result of GreenCape's close working relationship with a multitude of different roleplayers within different sectors, the team is in a unique position to acquire and disseminate knowledge about key industries and sectors in the green economy. GreenCape shares this intelligence through their annual "Market Intelligence Reports" (MIR). The 2017 MIRs cover the themes of: **i)** utility-scale renewable energy; **ii)** energy services; **iii)** sustainable agriculture; **iv)** waste economy; and **v)** water. In addition, GreenCape developed its first annual report in 2017, which provides an overview of the organisation's achievements in the green economy space in the 2016/2017 financial year.

GreenCape
Supporting the business of green

Click here to view these reports and other information related to the organisation's work in the green economy space in the Western Cape.

GREENCAPE WINS THREE ECOLOGIC AWARDS FOR THEIR WORK IN THE GREEN ECONOMY.

In June 2017, GreenCape won an impressive three awards at the annual Ecologic Award ceremony. GreenCape were acknowledged for their outstanding efforts and hard work in promoting the green economy, which earned them a gold award in the Green Economy category. GreenCape also received two awards for their work on the Western Cape Industrial Symbiosis Programme (WISP): a silver in the Recycling and Waste Management category and a bronze in the Climate Change category.

Some cumulative impacts of the WISP initiative, from 2013-2017, include:

- 27 436 tonnes of waste diverted from landfill
- R43,08 million generated in financial benefits (additional revenue, cost savings and private investment)
- 143 jobs created in the economy, of which 25 are direct jobs in member companies.

Click here for more information about the WISP programme.

IMAGE SOURCE: ©GreenCape - https://www.green-cape.co.za/content/sector/wisp

2.4 TABLE 2: GREEN ECONOMY PROJECTS UPDATE

PROJECTS AND PROGRAMMES	PROJECT OVERVIEW AND OBJECTIVES	PROJECT UPDATE	NEXT STEPS
WATER			
WATER DECISION MAKING TOOL	• GreenCape partnered with the African Climate and Development Initiative at UCT on a 3-year project, entitled "Managing water as a constraint to development with decision-support tools that promote integrated planning: the case of the Berg Water Management Area." • The project was funded by the Water Research Commission and DEDAT. • It sought to develop new solutions and approaches for water resources planning and allocation, economic development decision-making and governance of water and economic development.	• The final report has been submitted and the project is now complete.	• GIS mapping will be handed over to the Department of Agriculture and the Department of Environmental Affairs and Development Planning's GIS units. • Extracts from the report are being considered as communication material for various stakeholders.
LANGRUG GENIUS OF SPACE (SYSTEMS FOR PEOPLE'S ACCESS TO A CLEAN ENVIRONMENT).	• The Genius of SPACE project is being initiated by the Western Cape government, with Stellenbosch municipality and the Langrug community. • The project uses biomimicry principles to clean up grey water, stormwater and solid waste challenges within the community using low-tech and easily maintained solutions.	• Community structures have been utilised to support the prototype implementation of the solid waste management system. • Commissioning of the eco-machine has been initiated, with installation due early 2018.	• Continued monitoring of the systems, in terms of maintenance and water quality improvements. • Undertake a communication campaign to attract private funding support for further roll out. • Limited funding is available to develop a case study analysis of the project, and hence a proposal for donor funding is being submitted in this regard.
BUSINESS WATER RESILIENCE PROGRAMME	• The Western Cape Government, together with key partners such as GreenCape, the City of Cape Town, Wesgro and the Western Cape Economic Development Partnership, is working closely with businesses to improve their water resilience and that of the Western Cape economy.	• Five municipal and business water dialogues were held in Cape Town, Beaufort West, Kannaland, Matzikamma and Knysna municipalities. • An economic impact survey has been drafted and a database developed. • 110% Green Website is being updated with information on a regular basis. • A decision tree to support SMEs has been drafted. • Guidelines to assist businesses with retrenching staff as a last resort has been developed. • A service provider has been appointed to conduct the economic analysis. • Materials have been developed that will assist businesses in encouraging their employees to reduce water consumption at their homes.	• Water dialogues to be scheduled in the remaining high-risk municipalities (such as Drakenstein). • Conduct an economic impact survey with businesses to better understand: **i)** water saving and alternative water supply measures; and **ii)** the economic impacts of the drought. • Draft a Business Continuity Plan template with input from businesses. • Work more closely with universities, colleges, critical services and independent schools. • Tackle regulatory challenges such as groundwater licensing. • Conduct a workshop on basement water reuse. • Finalise the donations management system.
THE WATER HUB	• The Water Hub is an initiative that entails the redevelopment of the old Franschhoek Wastewater Treatment Works into an innovative water centre. • The project will see the establishment of a research, technology demonstration and skills development centre that will focus on advancing knowledge of how nature can clean polluted water, and thus restore the health of our river systems.	• An event was held that was linked to the International Young Water Professional's Conference. • Ongoing research with the University of Cape Town. • Engagements held with the Cape Higher Education Consortium for stronger collaborations with other universities.	• Proposal to be developed for donor funding, which will be used to: **i)** develop a business plan; and **ii)** implement a management structure. • Develop a procurement plan for ongoing supervision and maintenance on site.
CAPENATURE: WATER RETROFITS	• CapeNature is seeking to retrofit 14 of its reserves with water efficient systems. This will be achieved through the installation of grey water systems, water management devices and atmospheric water generators.	• The grey water system and water management device installations have been completed. • The procurement of the atmospheric water generator project is near completion.	• Upon concluding the successful implementation of pilot retrofit projects, these initiatives will be rolled out to additional CapeNature reserves.

Table continues on next page

PROJECTS AND PROGRAMMES	PROJECT OVERVIEW AND OBJECTIVES	PROJECT UPDATE	NEXT STEPS
CLANWILLIAM DAM REPAIRS	• Proactive repair work is being undertaken by the Western Cape Department of Agriculture on the Clanwilliam Dam, to stem water losses to farmers in the area.	• Project is going ahead as planned and repairs are being made to the canal.	• Repair work will be continued until the canal is secure to transport water for irrigation purposes.
WCG BUILDING: WATER RETROFITS	• The Department of Transport and Public Works are undertaking measures to ensure that WCG buildings are more water efficient.	• 71 water meters have been installed at 28 WCG buildings. • Groundwater is being used at the 9 Dorp Street building to flush toilets.	• Further investigations are being conducted into the use of blackwater treatment plants, waterless urinals and the installation of additional water meters.
ENERGY			
LIQUEFIED NATURAL GAS IMPORTATION	• The Department of Economic Development and Tourism is embarking upon a project to determine the economic and technical feasibility of importing Liquified Natural Gas (LNG) into the province with a specific focus on the West Coast region (Saldanha-Cape Town corridor).	• The agreement with the United States Trade and Development Agency (USTDA) for the $800,000 (R10,7 million) feasibility study on the proposed liquefied natural gas importation and gas-to-power project has been signed.	• Service provider needs to be appointed to provide a more granular demand study. • The procurement for a techno-economic feasibility study of energy for LNG transport is underway.
SMART GRIDS	• The aim of the Smart Grids project is to: **i)** determine the feasibility of implementing smart grid technologies within Western Cape municipalities; **ii)** identify barriers to implementation; and **iii)** facilitate the uptake of these technologies.	• 15 municipalities now allow SSEG. • 26 CEO engagements have been held, against a financial year target of 20. 10 of these companies have proceeded to the final quote stage for installing rooftop PV. • A PV installer test is now being offered by 3 FET institutions.	• Continue working with the 5 target municipalities on the implementation of their tariffs and regulations for SSEG. • Revise the target for CEO engagements on SSEG for the 2018/2019 financial year. • Assess the roll-out of the PV installer test.
WCG BUILDING: ENERGY RETROFITS	• The Department of Transport and Public Works are undertaking measures to ensure that WCG buildings become more energy efficient.	• 9 solar PV systems have been installed, with another 4 underway. • 579 electricity meters have been installed across 28 buildings.	• Continued roll out and installation of solar PV systems and electricity meters at WCG buildings.
ECOSYSTEMS			
PROVINCIAL BIODIVERSITY ECONOMY STRATEGY (PBES)	• PBES is a five-year strategy that is aligned with the National and Provincial Medium Term Strategic Frameworks 2014-2019, the National Biodiversity Strategy and Action Plan and the National Biodiversity Economy Strategy. • PBES represents the implementation of actions proposed in the Provincial Biodiversity Strategy and Action Plan (PBSAP).	• The Biodiversity Economy Programme (BEP) emanated from PBES. The BEP resulted in the implementation of several initiatives such as: **i)** the Ecological Infrastructure Investment Framework; **ii)** Payment for Ecosystem Services; **iii)** Agroforestry and Natural Products; **iv)** Sustainable Harvesting of Honeybush; **v)** Estuaries Cost and Benefit Analysis; and **vi)** Wild Bee Population Values and Risks.	• Update the PBES and implementation programme. • Address processes related to enhanced value of sustainable use systems in natural products and carbon economies.
ECOLOGICAL INFRASTRUCTURE INVESTMENT FRAMEWORK (EIIF)	• The framework and strategy will address threats to water resources from unsustainable use, transformation, urban and infrastructure development, land degradation and invasive alien species.	• Consolidated the key role players and relevant sectors around the flagship EIIF concept to facilitate a coordinated, strategic and inclusive approach to water security and alien clearing on a province-wide scale. • A bid process was initiated during 2017 to appoint a specialist bidder who will develop and implement the EIIF over the next three years.	• Appointment of specialist bidder. • Develop: **i)** a catchment prioritisation analysis; **ii)** a risk assessment in all priority catchments; and **iii)** 3 consolidated Management Unit Clearing Plans (MUCPs) for prioritised catchments.
VALUE ADD TO ALIEN VEGETATION REMOVED	• This project seeks to find innovative means to add financial value to alien biomass that has been removed from the Berg River system.	• Alien water weeds have been successfully controlled. • A study and business plan around the value of alien biomass is being finalised. • Tourism concept around the development of a "Berg River Camino" is in Phase 1 of 4.	• Continued implementation of all 3 sub-projects.
WASTE AND POLLUTION			
WASTE ECONOMY BUSINESS CASE DEVELOPMENT	• This project commenced in 2016, with the initiation of a status quo report of waste interventions – locally and abroad – and concluded at the end of March 2017.	• Project outputs included a status quo report on the waste economy in the Western Cape, a detailed gap analysis of opportunities in the various waste streams and two business cases of: **i)** the development of an App to facilitate collections of recycling and organic waste; and **ii)** Tyre Crumbing.	• The two business cases will be further interrogated and, if deemed feasible, will be unpacked into finalised product plans.

Table continues on next page

PROJECTS AND PROGRAMMES	PROJECT OVERVIEW AND OBJECTIVES	PROJECT UPDATE	NEXT STEPS
WASTEPRENEURS	• The Department of Environmental Affairs and Development Planning's Wastepreneur project provides training to waste recycling and informal waste collector entrepreneurs.	• 15 Wastepreneurs from the pilot programme are successfully being supported.	• Business diagnostics reports for 10 waste enterprises in the Eden district were completed and onsite business mentorship is in progress for these beneficiaries. • A final report is being completed on the progress of the original project beneficiaries. • DEA&DP is partnering with DEDAT's Enterprise Development division, who will review existing beneficiaries for further development. • Preparation is underway to extend the roll-out of the support programme to small and micro enterprises in the West Coast district and surrounds.
AGRICULTURE			
SMARTAGRI	• The Smart Agriculture for Climate Resilience (SmartAgri) project is a collaborative project between the Western Cape Department of Agriculture, the Western Cape Department of Environmental Affairs and Development Planning and the African Climate and Development Initiative at UCT. • SmartAgri has resulted in several resources for the agricultural sector including the SmartAgri Plan, case studies and briefs that provide guidance on specific regions and commodities. • SmartAgri resources are available on the GreenAgri website.	• The agriculture sector is currently "pulling" information as opposed to it being pushed by the Department. • The three priority projects of the SmartAgri programme include: **i)** conservation agriculture; **ii)** extension services; and **iii)** agri-processing.	• Continued implementation of the programme.
GREENAGRI	• The GreenAgri website was developed by the Western Cape Department of Agriculture in collaboration with GreenCape. • The objective of the portal is to provide farmers, researchers and private organisations with information and research about smart agricultural practices, research and initiatives.	• Six GreenAgri animations that demonstrate the uptake of green practices, technologies and programmes have been developed. • Since the GreenAgri portal launched in September 2015, there have been more than 16 000 users of the website.	• Continued updating and marketing of the GreenAgri portal.
CLIMATE RESILIENCE PROJECT	• The Department of Agriculture is undertaking a project to provide climate resilient extension support services to farmers.	• Key resource challenges and potential interventions have been identified for smallholder producers, based on an analysis of performance evaluations. • Suitable opportunities for greening production have been identified.	• GreenCape is gathering intelligence on the economic feasibility of appropriate green technologies. • A green filter, which focuses on water and energy for small holder farmers, is being developed. This will be used when new farmers are supported to determine the opportunity for resource use.
ALTERNATIVE BUILDING MATERIALS AND DESIGN			
BETTER LIVING CHALLENGE	• A competition-based project, where contestants submit affordable alternatives for structure, comfort and connectivity in low-income households, with a focus on sustainability and resource efficiency. The challenge is being coordinated by the Craft and Design Institute in collaboration with the WCG.	• A draft has been completed of the visual, spatial and passive design literacy toolkit. • A blueprint of the prototype design and build skills development incubation programme has been developed. • Draft ecosystem mapping is complete. • Needs analysis resource content has been made available on the BLC website.	• Graphic design of the ecosystem mapping package to be undertaken. • Planning is in process to complete an emergency housing toolkit in the form of a "how to" guide. • The skills development incubation programme blueprint is to be explored with stakeholders. • Testing and packaging of the passive design literacy toolkit.

Table continues on next page

PROJECTS AND PROGRAMMES	PROJECT OVERVIEW AND OBJECTIVES	PROJECT UPDATE	NEXT STEPS
CLUSTER DEVELOPMENT AND SUPPORT			
GREENCAPE SECTOR DESKS	• GreenCape's sector desks collect, collate and disseminate market intelligence on the green economy. The sector desks facilitate and enable discussions and events with relevant sectoral industry bodies and business.	• Renewable energy and energy services sector desk: • 64 meetings held with industry, academics and government, as well as 390 virtual sector engagements. • Draft wheeling framework developed for the City of Cape Town. • Waste sector desk: • 58 companies engaged and supported. • Presented or facilitated at 5 industry-related events. • Water sector desk: • 94 meetings in the water sector. • Supported and hosted 4 industry related events.	• Continue business engagements.
ATLANTIS SPECIAL ECONOMIC ZONE	• The Atlantis GreenTech Special Economic Zone aims to leverage a national policy, infrastructure support and incentives to stimulate investment and job creation in areas of green technology, thus adding to the Western Cape's position as a leading Greentech trailblazer.	• Atlantis Special Economic Zone strategy review has been commissioned. • The Wesgro board has agreed to establish a Strategic Economic Development Infrastructure Company (SEDIC), which aims to facilitate strategic economic development infrastructure investments.	• Designation of the SEZ. • Set up the SEDIC. • Enter into a contract with the City of Cape Town regarding the land. • Prepare for the appointment of an SEZ operator.
GREEN ECONOMY COORDINATION	• The Western Cape Department of Economic Development and Tourism is responsible for the strategic coordination of green economy initiatives throughout the Western Cape province.	• The 100% Green website is functional and is being continually updated with specifically water relevant information.	• Review of green economy coordination structures.
ECONOMIC RISKS AND OPPORTUNITIES OF CLIMATE CHANGE	• An assessment of the Economic Risks and Opportunities of Climate Change has been initiated by the Climate Change directorate in DEA&DP. The project is investigating the future economic risks and opportunities of climate change resilience in the Western Cape. The project focuses on five sectors: water, transport, construction, agriculture and energy.	• The final outcomes of the Computable General Equilibrium (CGE) Model Phase 1 report is largely complete, with minor edits underway. • The Cost-Benefit Analysis (CBA) is largely complete.	• Work is underway for Phase 2 of the project, which includes a Cost-Benefit analysis of implementation interventions. • The final consolidated report, including both the CGE modelling and CBA, will be completed in early 2018.
GREEN ECONOMY INDICATOR REPORT	• The indicator framework is responsive to international, national, provincial and local green economy policies, strategies and indicator sets. • The framework provides a comprehensive picture of the green economy, not just tracking government actions. • The indicator framework is aligned and responsive to national and parallel provincial data collection.	• The 2017 Green Economy Report has been finalised.	• Work will proceed on the development of the 2018 Green Economy Report at the beginning of the 2018/2019 financial year.
SUSTAINABLE PUBLIC PROCUREMENT	• The project seeks to mainstream Sustainable Public Procurement in the WCG. • Leverage WCG spend in order to encourage green innovation and resource efficient practices in the private sector.	• The International Institute for Sustainable Development, WWF-SA and the Western Cape Government have developed a "Sustainable Public Procurement Guidebook."	• The SPP team will work closely with relevant provincial departments on the development of an Economic Procurement Strategy.
GREEN PROCUREMENT IN STATE SUBSIDISED HUMAN SETTLEMENTS	• This project is being managed by the Western Cape Department of Human Settlements.	• Guidelines have been approved and incorporated into the project application templates and procedures.	• Approval of the amended Project Activation Standard Operating Procedure. • Accreditation of departmental professional in the EDGE tool (in collaboration with the Green Building Council SA and the International Finance Corporation). • Support municipalities to apply the green procurement policy guidelines in order to build capacity and ensure wider application of the project.

3 REVIEW OF GREEN ECONOMY OPPORTUNITIES AND BARRIERS IN THE WESTERN CAPE

IMAGE SOURCE: ©GreenCape. Image reproduced with permission from GreenCape

3.1 ENERGY SERVICES

TRENDS IN THE ENERGY SERVICES SECTOR FOR 2017

Uptake of Small Scale Embedded Generation rules and regulations

GreenCape, with the support of the Western Cape Government (WCG), has developed a set of guidelines for municipalities that enables them to promote Small Scale Embedded Generation (SSEG) to end users. There has been a dramatic uptake of these rules and regulations over the past 18 months: within the space of a year, the number of municipalities with SSEG rules in place increased from less than 5, to close on 25. In November 2016, these SSEG rules and regulations were adopted by the Association of Municipal Electricity Utilities (AMEU) with the assistance of the South African Local Government Association (SALGA) and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). These rules will be rolled out across the country. See Table 3 for a list of Western Cape municipalities that currently[4] enable SSEG to feed back into the grid.

Table 3: List of Western Cape municipalities that enable Small Scale Embedded Generation.

MUNICIPALITIES	SSEG TARIFFS	SSEG POLICIES
BEAUFORT WEST	Yes	In progress
BERGRIVIER	No	In progress
CITY OF CAPE TOWN	Yes	Yes
DRAKENSTEIN	Yes	Yes
GEORGE	Yes	Yes
MOSSEL BAY	Yes	Yes
OUDTSHOORN	In progress	In progress
OVERSTRAND	Yes	In progress

Table continues on next page

4 At the time of publication of GreenCape's Energy Services Market Intelligence Report for 2017.

MUNICIPALITIES	SSEG TARIFFS	SSEG POLICIES
OUDTSHOORN	In progress	In progress
OVERSTRAND	Yes	In progress
STELLENBOSCH	Yes	Yes
SWARTLAND	Yes	Yes
THEEWATERSKLOOF	Yes	Yes
LANGEBERG	Tariff consultant appointed	Yes
BREEDE VALLEY	In progress	No

Decentralised approach to managing and delivering energy

The power sector value chain is experiencing a shift from a centralised management approach of energy provision, to a more decentralised approach. At a national scale, there has been a strong stimulus for individuals, businesses, industry and government to shift towards alternative energy service[5] options, which includes embedded generation and energy efficiency. This shift is characterised by a more localised and decentralised approach to energy provision and management. This shift has largely been driven by policy frameworks, decreasing technology costs and above-inflation electricity price increases. This shift in the energy services market is taking place predominantly within the industrial and commercial sectors.

Rapid uptake of solar PV

Solar PV has experienced a rapid uptake over the past two years, which has outpaced the ability of national regulators to develop effective regulations and policies to manage this uptake. As a result, local municipalities – in collaboration with provincial government – have had to take the initiative to develop their own policies and practices to govern the uptake of solar PV.

OPPORTUNITIES AND CHALLENGES IN THE ENERGY SERVICES SECTOR

Opportunities:

- National regulations and acts mostly predate the SSEG revolution and are largely inadequate in the current environment. As such, local municipalities, in partnership with provincial government, have developed their own policies and practices to govern SSEG thus decentralising and liberalising the governance process. Work is underway to introduce SSEG guidelines to all municipalities in South Africa.

- The main opportunities in the energy services value chain lie in: **i)** the embedded generation market, predominantly rooftop solar PV; **ii)** improvements in energy management in the public sector (e.g. energy efficiency in public buildings); and **iii)** demand-side interventions.

- Opportunities are significant for renewable energy developers in municipalities that can procure from Independent Power Producers (IPPs).

- The solar PV market drivers are creating opportunities for equipment suppliers, project developers, technical advisors and financial investors in renewable energy generation, leading to the creation of many more green jobs.

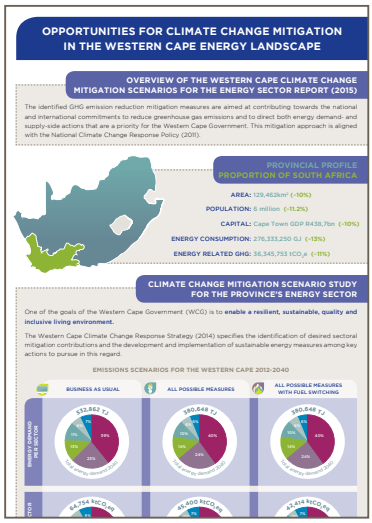
- With the decreasing technology costs of embedded generation, interventions are approaching a point where the payback per month on an installation will exceed the financing costs. This would turn interventions from savings into investments.

5 GreenCape defines energy services as, "services that are delivering an energy solution to the end user, be it to achieve a reduction in total consumption, or to bringing in new, own energy supply, or a combination of both."

Barriers:

- A ministerial order currently exists that prevents municipalities from procuring energy from sources other than Eskom.
- The difficulty for public institutions to acquire the necessary capital funds to implement some of the larger energy savings opportunities presents a barrier to increased uptake.
- While battery technology costs are decreasing, along with generation technology costs, the combination of both generation and storage are at price points higher than what many customers obtain from the conventional grid. Hence the case for these battery storage systems is still some distance away.

For more information, visit:



Click here:
Opportunities for Climate Change Mitigation in the Western Cape Energy Landscape

Click here:
GreenCape Energy Services Market Intelligence Report 2017

3.2 WATER AND SANITATION

OVERVIEW OF THE WESTERN CAPE WATER SUPPLY SYSTEM

According to the World Economic Forum's Global Risk Report, water crises were rated the top societal risk for 2017, and third overall. In previous years, water crises had been categorised as an "environmental" risk, but changed to a "societal" risk in 2015. This is reflective of the socio-economic impacts that result from water scarcity and flooding events, as evidenced through the Western Cape's multi-year drought and the flooding events in Gauteng and Kwazulu-Natal.

The Western Cape Water Catchment Areas include the Berg, Breede, Olifants / Doorn and the Gouritz Water Catchment Areas (Figure 2). Whilst there are towns that are almost completely supported by groundwater, most of the region's water supplies are surface water dependent. The past 3 years have seen a period of reduced rainfall, with 2017 recording 30% of Mean Annual Runoff of the area (Figure 3). This has resulted in a critical shortage of stored water for the dry summers - both for the agricultural sector as well as for urban use. By the end of 2016, the agriculture sector had appealed to the National Department of Agriculture for drought relief funds especially for fodder for livestock. During 2017, a

Provincial state of disaster was declared in terms of Section 41(1) of the Disaster Management Act (Act 57 of 2002), as multiple municipalities had applied for disaster status including the City of Cape Town.

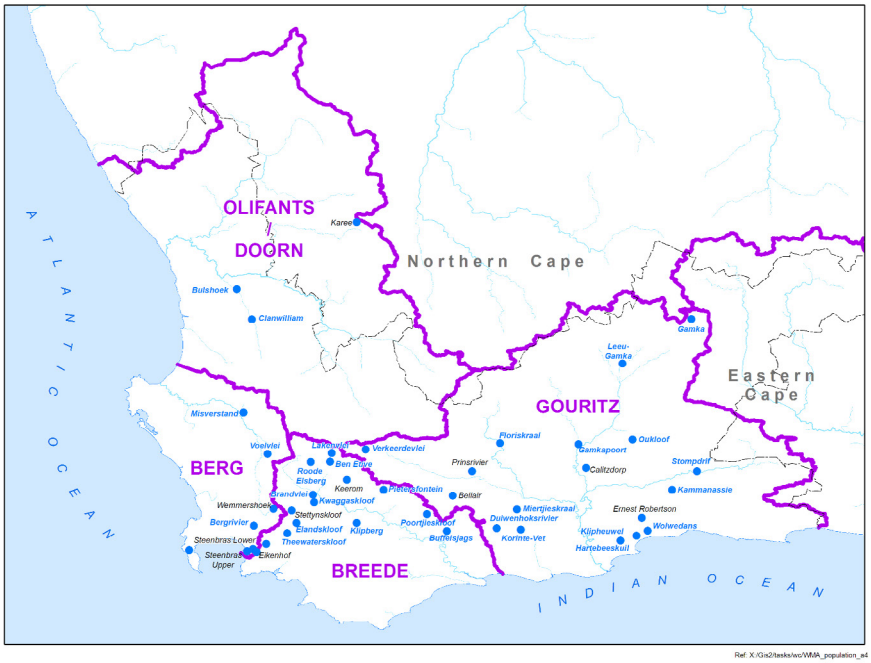


Figure 2: Water Catchment Areas of the Western Cape.

The Western Cape Water Supply System (WCWSS) is comprised of several Water Source Areas (WSA), including: Boland Mountains, Groot Winterhoek, Kougaberg, Langeberg Mountains, Outeniqua, Swartberg and Table Mountain. Irrigation to support agriculture is a major water use in the two Water Management Areas (WMAs) in the Western Cape: the Breede-Gouritz and Berg-Olifants (Figure 4). In the Berg-Olifants, water supply to the City of Cape Town represents a dominant use.

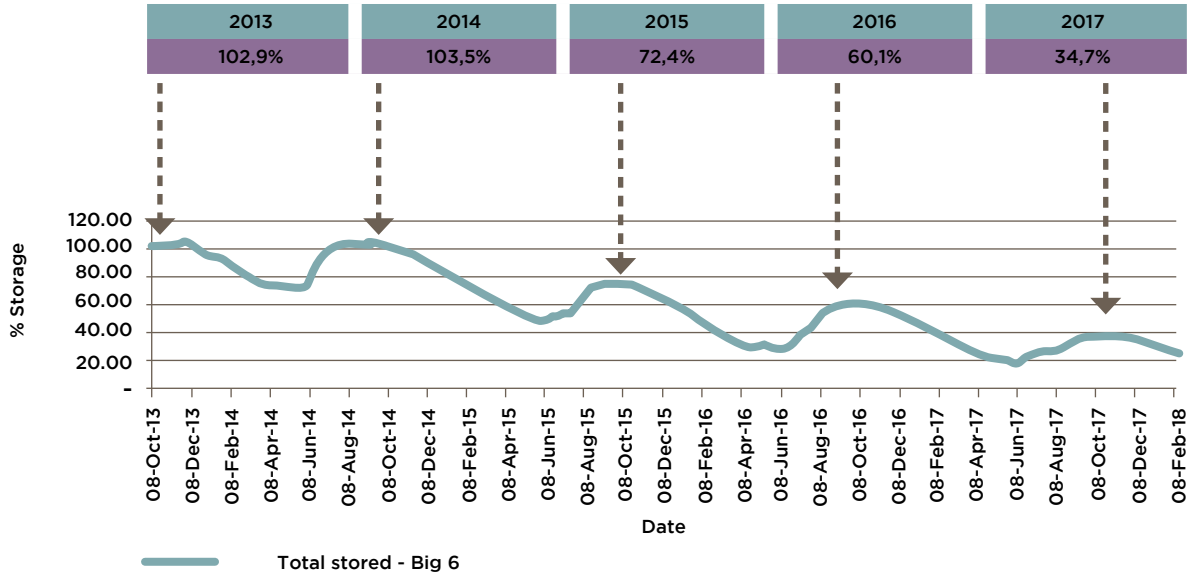
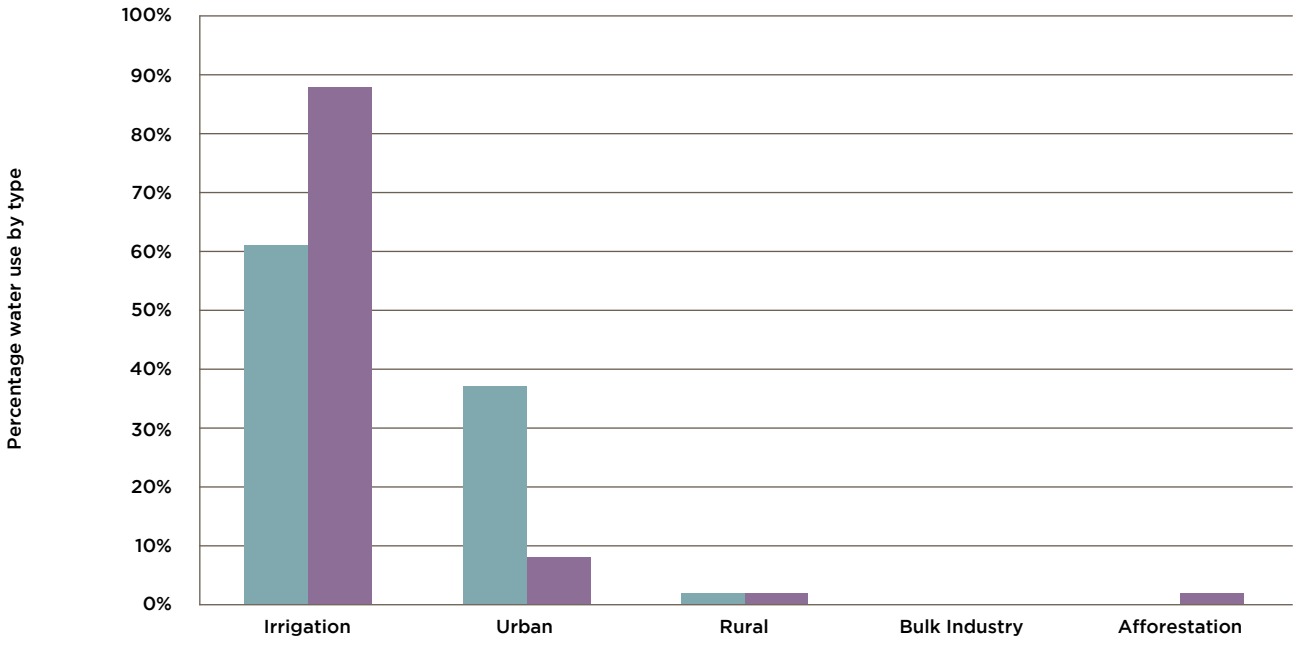


Figure 3: Surface water storage in the dams of the Western Cape Water Supply System (2013-2017).

Agricultural activity in the Western Cape covers an area of approximately 11,5 million hectares, where between 55% and 60% of South Africa's agricultural exports are produced. The WCWSS also supplies an area that produces approximately 86% of the province's Gross Domestic Product (GDP) and is thus one of the most important water catchments within the country.



	Irrigation	Urban	Rural	Bulk Industry	Afforestation
Berg-Olifants	61%	37%	2%	0%	0%
Breede-Gouritz	88%	8%	2%	0%	2%

Figure 4: Water use by type for the two Western Cape Water Management Areas[6]
(Source: The National State of Water Resources Quarterly Report, July to September 2014).

The impact of the drought on the economy is highly complex and preliminary work was undertaken by Department of Economic Development and Tourism to determine the water dependencies within the Western Cape economy. Figure 5 tracks the impact categories across the economy.

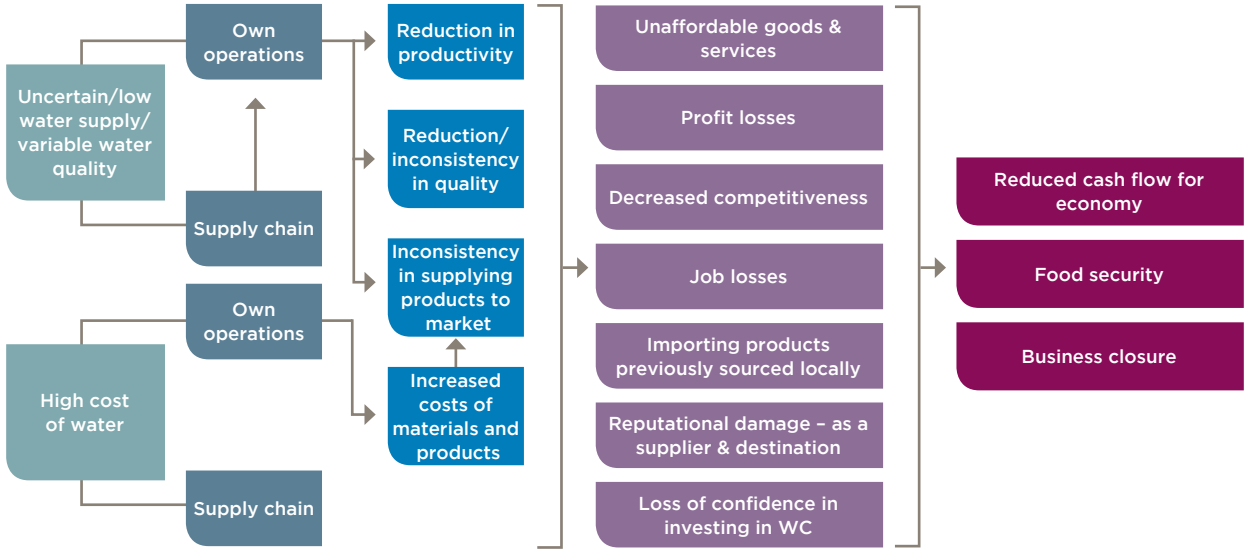


Figure 5: Diagram that illustrates the impact of the drought across the Western Cape's economy.

6 Categories that indicate "0%" had a contribution of less than 0,5%, and were rounded down to 0%.

The Western Cape Climate Change Response Strategy (WCCCRS) highlights the priority water security areas that need to be addressed under current and future climate change conditions. These include:

- Invasive alien clearing
- Prioritisation, valuation, mapping, protection and restoration of ecological infrastructure in catchments
- Effective utilisation of irrigation water
- Resource nexus decision support
- Development of ecosystem goods and services (EGS) investment opportunities.

GREEN ECONOMY PROJECTS RELATED TO THE WATER AND SANITATION SECTORS

The Water Hub

The Water Hub is an initiative that entails the redevelopment of the old Franschhoek Wastewater Treatment Works into an innovative water centre. The project will see the establishment of a research, technology demonstration and skills development centre that will focus on advancing knowledge of how nature can clean polluted water, and thus restore the health of our river systems. The Water Hub will be the first of its kind to demonstrate innovative techniques and technologies that are suitable to the African context. Through strong collaborative efforts between academia, the public sector and private industry, the Water Hub will be instrumental in promoting more liveable cities, appropriate solutions to contaminated stormwater and water reuse, and healthier rivers and wetlands.

Key public sector and academic stakeholders include the: **i)** Western Cape Government; **ii)** National Department of Water and Sanitation; **iii)** National Department of Science and Technology; **iv)** GreenCape; **v)** The Water Research Commission; **vi)** Stellenbosch Municipality; **vii)** University of Cape Town; **viii)** University of Stellenbosch; **ix)** University of the Western Cape; and **x)** Cape Peninsula University of Technology.

Phase 1 of the project has been implemented thus far, which includes the development of treatment cells and the construction of a research office on site. These treatment cells are a bioremediation intervention that seeks to: **i)** address the issue of stormwater pollution within a tributary of the Berg river; and **ii)** provide research opportunities to test the effectiveness of different types of filter media and plant species to passively clean polluted water. In addition, progress is being made regarding the sourcing and securing of the necessary capital funding for the project through the finalisation of a suitable business model.

For more information, and for regular updates on The Water Hub, visit:

SOURCE: The Water Hub, https://www.thewaterhub.org.za/

Click on the links below to view The Water Hub online:

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Genius of SPACE

The Genius of Systems for People's Access to a Clean Environment (SPACE) pilot project is being implemented in the Langrug informal settlement in Franschhoek, and is being coordinated by Western Cape Government with the Langrug community. The project is being transversally funded through the Department of Human Settlements, Department of Economic Development and Tourism as well as the Department of Environmental Affairs and Development Planning. The project uses biomimicry principles to clean up grey water, stormwater and solid waste challenges within the community using low-tech and easily maintained solutions.

Thus far, the Genius of SPACE project has: **i)** implemented a household system for the disposal of greywater to prevent pollution from stormwater within the community; and **ii)** begun to design and implement a solid waste system for the collection of general waste, the separation of organic and inorganic waste as well as the separation of recyclables from organic waste. The aim is to create microenterprise opportunities within the community through recycling and the separation of waste. The next phase of the project includes the implementation of an eco-machine to improve the treatment and management of contaminated stormwater.

OPPORTUNITIES AND CHALLENGES IN THE WATER AND SANITATION SECTORS

Opportunities:

- Water reuse, recycling and recovery is becoming increasingly adopted across households, industry and business. There are thus opportunities for the manufacture, assembly and supply of treatment and reuse components and systems, as well as products and services related to industrial symbiosis.

- Energy that is used for water treatment and conveyance, and water that is used for energy generation, present opportunities for innovation and investment.

- There is a rapidly expanding market for technical solutions that measure, report and control water consumption at all scales of use.

- Regional surface water resources are almost fully allocated, driving investments into the development of local water resources. This includes: **i)** the installation of rain, storm and greywater systems; **ii)** new groundwater resources; **iii)** aquifer recharge; and **iv)** desalination.

Barriers:

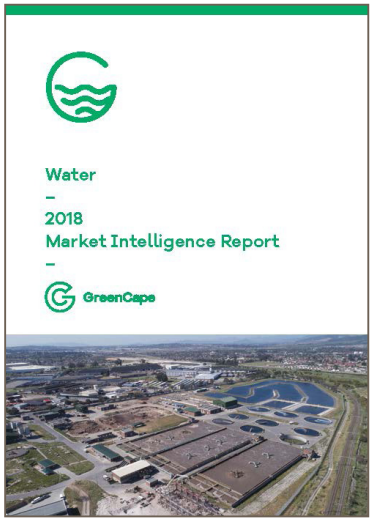
- Regulatory hurdles including the slow pace of municipal procurement and the difficulty of developing long-term public-private partnerships, such as water offtakes from private systems.

- Capital requirements to invest in new green infrastructure.

- Technical capacity in municipalities to design and implement new systems for water savings or treatment.

- Lack of funding for research into, and the pilot development of, new technology.

For further information, see:



Click here to download the GreenCape Water Market Intelligence Report 2017

Click here to download the Western Cape Sustainable Water Management Plan

3.3 BIODIVERSITY

ACHIEVEMENTS IN THE BIODIVERSITY SECTOR IN 2017

In 2017, the development of the Western Cape Biodiversity Spatial Plan was finalised. This plan was developed by CapeNature in collaboration with the Western Cape Government's Department of Environmental Affairs and Development Planning. The BSP is a spatial tool that comprises the Biodiversity Spatial Plan (BSP) Map of biodiversity priority areas, as well as contextual information and land use guidelines in the form of a handbook. The BSP Map is a GIS tool that has been developed at a relatively fine spatial scale (1:10 000 – 1:50 000) and can therefore be used for planning at local, district and provincial levels. The use of the BSP Map ensures that opportunities and constraints are proactively incorporated into integrated development planning as well as land use decision-making (Pool-Stanvliet et al, 2017). The BSP replaces previously published biodiversity informants to strategic planning and will be incorporated into the Provincial Spatial Development Framework as well as Municipal Spatial Development Frameworks.

Click here to view the BSP Map on SANBI's BGIS website.

At the end of March 2017, a Community of Practice (CoP) for Alien Clearing, Restoration and Biomass Economies (ACRABE) was developed, which aims to coordinate all relevant national, provincial and municipal role players and sectors through a coordinated, strategic approach and the sharing of information.

A further achievement was the establishment of a Honeybush Community of Practice spanning the Eastern and Western Cape role players and the launch of "Guidelines for the Sustainable Harvesting of Wild Honeybush."

The Western Cape Government's Biodiversity Unit drove the development of the Bitou Agroforestry business concepts which have become trade ready, with significant benefits to local community members.

CAPENATURE

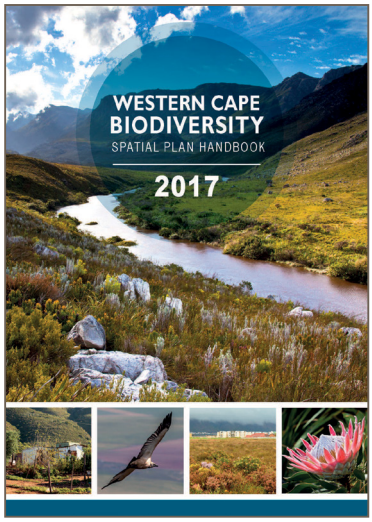
The CapeNature Annual Report for the 2016/2017 financial year highlights the organisation's achievements in the biodiversity conservation sector. Amongst others, these include:

- Expanding CapeNature's conservation estate by adding 69,338ha of land, primarily through agreements with private landowners;
- Supporting 21 SMEs in and around CapeNature reserves; and
- Entering into 557 Expanded Public Works Programme (EPWP) employment contracts with job seekers from 70 communities across the Western Cape.

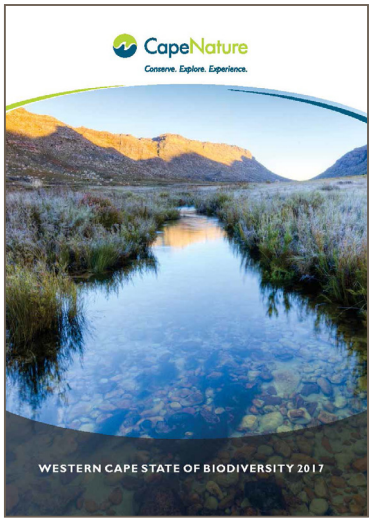
In addition, in July 2016, CapeNature won two awards at the Mail and Guardian's Greening the Future awards[7]. CapeNature's Conservation Stewardship programme was the winner in the category, "Biodiversity Stewardship." This programme[8] seeks to ensure that privately owned land in the Western Cape – that has a high biodiversity value – receives conservation status and that land owners are empowered to undertake sound biodiversity management practices. In addition, CapeNature's Conservation Detection Dog project was the winner in the category, "Species Conservation." This project[9] uses trained conservation detection dog teams to carry out surveys on geometric tortoises (Psammobates geometricus). These tortoises are listed as critically endangered by the IUCN and are the third most endangered land tortoise in the world. In order to conserve this tortoise species, information about the size of a population, as well as the presence/absence of a species in a habitat, needs to be known. By training dogs to detect these tortoises in the field, it will ensure that important information about these tortoises is gathered in a more efficient and unbiased manner.

The strategic goals for CapeNature in 2017, as outlined in the CapeNature State of Biodiversity Report 2017, is to: **i)** improve invasive alien species management, particularly invasive woody plants to improve water delivery; **ii)** ensure more efficient fire management; **iii)** expand the protected area estate through a biodiversity stewardship programme; and **iv)** improve and modernise biodiversity conservation legislation for the Western Cape province (Turner, 2017).

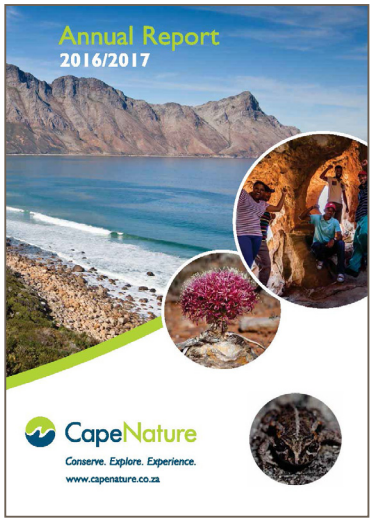
For more information, visit:



Click here to download the Western Cape Biodiversity Spatial Plan Handbook



Click here to download the CapeNature State of Biodiversity Report 2017



Click here to download the CapeNature Annual Report 2016/2017

7 http://www.capenature.co.za/greening-the-future-awards-2016/
8 http://www.capenature.co.za/care-for-nature/stewardship/
9 http://www.capenature.co.za/conservation-detection-dog-project/

3.4 SUSTAINABLE AGRICULTURE

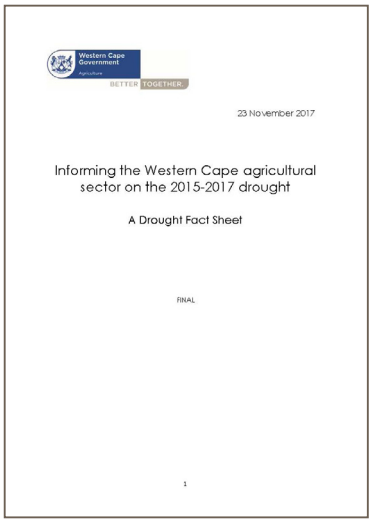
SUSTAINABLE AGRICULTURE TRENDS IN THE WESTERN CAPE IN 2017

Agriculture forms an important component of the Western Cape's economy, with the province dominating much of South Africa's export production. Specifically, high value export crops - such as wine grapes and fruit – dominate the Western Cape's export market. These export markets are driving the transition towards the adoption of sustainable agricultural techniques by farmers in the Western Cape, partly as a result of international regulations requiring more environmentally friendly practices. In addition to primary agriculture, agri-processing plays an important role in the Western Cape's green economy and has been identified as a key growth sector for the province (Pineo et al, 2017). The agri-processing sector contributes R12 billion in goods and services to the Western Cape's economy and accounts for 79 000 formal jobs in the province[10].

Controlled Environment Agriculture (CEA) is showing increasing growth in both urban and rural areas of the Western Cape. CEA has the potential to reduce the risks associated with climate change whilst contributing towards agricultural outputs. Indeed, high-tech CEA has been shown to require as little as 5% of the water needs of traditional agriculture (Bronkhorst et al, 2017). According to GreenCape, the current baseline market for CEA in the Western Cape is estimated at R28 million for low-tech CEA and R600 million for high-tech CEA. Growth in CEA is predicted to reach approximately 15% per annum.

IMPACTS OF DROUGHT ON THE WESTERN CAPE'S AGRICULTURE SECTOR

A Drought Fact Sheet was developed by the WCG's Department of Agriculture, which details the facts behind the drought's conditions as well as its impact upon various aspects of the agriculture sector. Specifically, the fact sheet provides details regarding the drought's impact upon: **i)** hydrology and vegetation; **ii)** agriculture within the Western Cape; **iii)** rainfed crop farming (cereals); **iv)** irrigated crop farming; **v)** livestock farming; **vi)** farm jobs; **vii)** the food system; **viii)** social welfare; and **ix)** the Western Cape Government's response and provision of relief to farmers.


Western Cape Government
Agriculture
BETTER TOGETHER.

23 November 2017

Informing the Western Cape agricultural sector on the 2015-2017 drought

A Drought Fact Sheet

FINAL

1

Click here to download the Drought Fact Sheet.

GREENCAPE AGRICULTURE SECTOR DESK

GreenCape seeks to drive the greening of the agricultural value chain in two ways, by: **i)** growing the market for green technologies, systems and processes in agriculture and agri-processing; and **ii)** developing sustainable and competitive agricultural value chains. GreenCape's agriculture sector desk focuses on primary agriculture, specifically on resource efficiency, renewable energy, sustainable farming practices and green technology.

GREENAGRI WEBSITE

The GreenAgri website was developed by the Western Cape Department of Agriculture and GreenCape. The main objective of the website is to provide farmers, researchers, private business and NGOs with information about smart agricultural practices, initiatives, research and legislation. Since its development in 2015, the GreenAgri website has been accessed by more than 10 000 visitors. The majority of users are from South Africa, with visitors also emanating from the United States, the United Kingdom, India, Germany and Kenya (Bronkhorst et al, 2017). According to GreenCape, the most visited pages on the GreenAgri website include:

- The Cape Farm Mapper, which is a free mapping tool that displays where different types of farming is being undertaken in the Western Cape.

10 State of the Province Address, 2015.

- Articles on topical issues.

- The SmartAgri Plan, which is the Western Cape Government's strategic plan to increase the resilience of the agriculture sector and agribusinesses to climate change.

GreenAgri

Click here to view The GreenAgri website.

DEPARTMENT OF AGRICULTURE PROGRAMMES

The DoA have articulated 7 strategic goals for the department over a five-year period (Table 4). The Department of Agriculture's specific interventions under each goal are further elaborated upon in the Western Cape Department of Agriculture's Annual Performance Plan for 2017/2018.

Click here to download the Western Cape Department of Agriculture's Annual Performance Plan for 2017/2018.

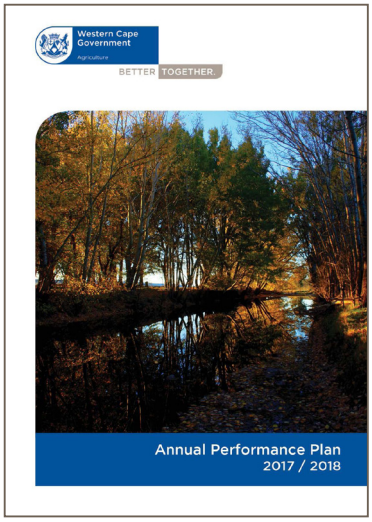


Table 4: List of the Department of Agriculture's Departmental Strategic Goals over a five-year period.

DEPARTMENTAL STRATEGIC GOAL	TITLE
1	Support the provincial agricultural sector to at least maintain its export position for the next 5 years by growing its value add from R16.349 billion in 2013.
2	Ensure that at least 70% of all agricultural land reform projects in the Province are successful over the next 5 years.
3	Support the sector (farmers and industries) to increase agricultural production (primary provincial commodities) by at least 10% over the next 10 years.
4	Optimise the sustainable utilisation of water and land resources to increase climate smart agricultural production.
5	Increase agricultural and related economic opportunities in selected rural areas based on socio-economic needs over a 10 year period, and strengthen interface with local authorities.
6	Enhance the agri-processing capacity at both primary and secondary level to increase the baseline by 10% by 2019.
7	Facilitate an increase of 20% in relevant skills development at different levels in the organisation and sector over the next 10 years.

OPPORTUNITIES AND BARRIERS IN THE SUSTAINABLE AGRICULTURE SECTOR

Opportunities:

- Increasing water constraints will continue to drive investment in water efficient technologies, energy-efficient pumping systems and resource-efficient agricultural practices.

- There is a growing uptake of controlled-environment agriculture, which is playing an increasingly important role in urban agriculture.

- There is a growing awareness of the impact of climate change on agriculture, and the need for a coordinated response across the value chain.

- Partnerships in finance and services for the agricultural sector.
- Use social responsibility as a market differentiation mechanism.

Barriers:

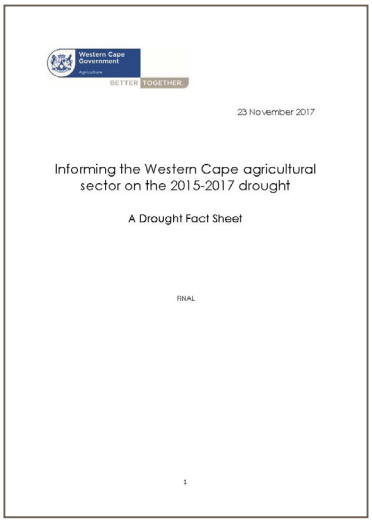
- A lack of awareness about the importance of sustainable agriculture, and how to go about achieving it.
- Regulatory hurdles, such as the lengthy timelines for Environmental Impact Assessments (EIAs) and the registration of new products.
- Insufficient support for farmers to access information and advice on best practice.
- A weak exchange rate and low profit margins make imported technologies too expensive for farmers.
- Limited funding available for Research and Development (R&D).

For more information, visit:

Western Cape Government
Agriculture

Click here:
Western Cape Department of Agriculture website

GreenAgri **Click here** to view The GreenAgri website.



Click here to download the Drought Fact Sheet for the Western Cape Agricultural Sector 2015-2017

Click here to download the GreenCape Sustainable Agriculture Market Intelligence Report 2017

TRENDS IN THE RENEWABLE ENERGY SECTOR IN 2017

Globally, and within South Africa, the uptake of renewable energy has been gaining momentum. This uptake of Renewable Energy (RE) has been locally expedited through the implementation of the Department of Energy's Renewable Energy Independent Power Production Procurement Programme (REIPPPP). The REIPPPP is a competitive bidding process that is used by national government to procure renewable energy generation capacity in line with the national Integrated Resource Plan for Electricity 2010 – 2030 (Bronkhorst et al, 2017). In the Western Cape, 14 REIPPPP projects have been procured thus far[11], resulting in the contracted capacity of 606MW of renewable energy (IPP Office, 2017). These projects represent a combination of wind, solar and biomass energy (Figure 6). As of June 2017, 452MW of this total contracted capacity was online[12].

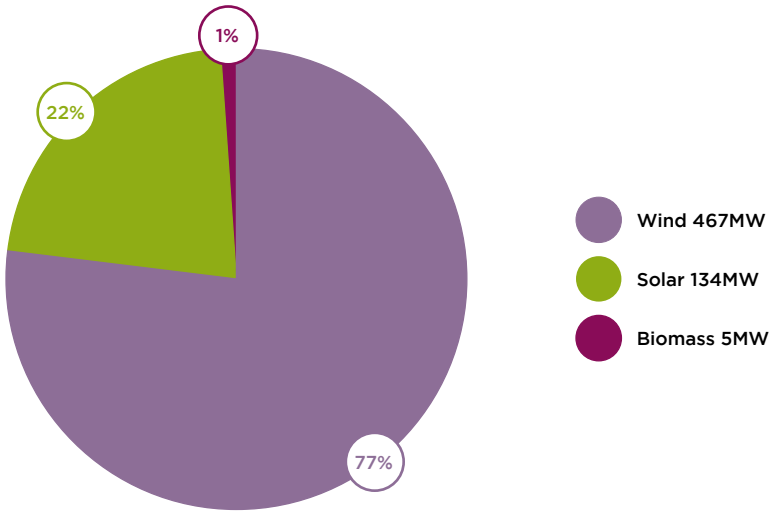


Figure 6: Sources, and the cumulative amount of, renewable energy procured in the Western Cape through the REIPPPP (Source: IPP Office, 2017).

The development and implementation of the REIPPPP in the Western Cape has largely been facilitated and enabled through GreenCape, in conjunction with local and district municipalities, industry bodies and the business sector. The programme has already resulted in numerous socio-economic benefits including:

- 10 000 local jobs created through renewable energy investments;
- 43 wind turbine technicians trained through the South African Renewable Energy Technology Centre (SARETEC);
- R17,5 billion of investments facilitated and supported in RE projects; and
- Wind turbine and solar PV service technician qualifications have been registered by the South African Qualifications Authority (SAQA).

11 As at 30 June 2017
12 "Online" refers to the capacity of projects that have reached Commercial Operations Date (COD) and excludes projects in the Early Operations Period (EOP).

OPPORTUNITIES AND BARRIERS IN THE RENEWABLE ENERGY SECTOR IN THE WESTERN CAPE IN 2017

Opportunities

- As the price points for successful bids evens out, the advantage for winning a bid will shift to those projects that have a stronger local economic development advantage. As such, there will be advantages for: **i)** investors in the local manufacturing of RE components; **ii)** local enterprises that supply in the RE value chain; and **iii)** community initiatives in proximity to the selected project locations.

- As a result of the decreasing costs of RE technologies, opportunities exist for the local manufacture and assembly of components. Localisation studies have been commissioned by the Department of Trade and Industry (DTI) for solar PV, wind energy and Concentrated Solar Power (CSP) technologies. Over the past three years, the Western Cape has already seen investments of approximately R500 million into component manufacturing.

- The Atlantis Special Economic Zone is projected to attract approximately R1 billion over the next five years, the bulk of which will come from investments in the manufacturing of RE components.

Barriers

- As a result of both increasing electricity prices and the affordability of renewable energy by households, municipalities are seeking innovative ways to reinforce their energy security whilst simultaneously promoting sustainability. However, a ministerial determination is needed to enable municipalities to purchase electricity directly from Independent Power Producers. There is currently no precedent for this.

For more information, visit:

Click here to download the Independent Power Producers Procurement Programme: An Overview (June 2017).

Click here to download the GreenCape Renewable Energy Market Intelligence Report 2017

3.6 INFORMATION AND COMMUNICATIONS TECHNOLOGY

The Western Cape Government's Green Economy Strategy Framework ("Green Is Smart") states that the provision of Information and Communications Technology (ICT) is essential for driving innovation and supporting new, resilient infrastructure investment within the province. Indeed, ICT infrastructure is considered to be one of the province's enablers to achieving a green economy. This infrastructure will need to include, amongst others, more reliable and efficient forms of internet access.

According to the broadband connectivity indicator in the Green Economy Report, the percentage of households with access to broadband connection has shown a continuous increasing trend over the past years, from 54,3% in 2012 to 57,05% in 2015[13]. The Western Cape Government is undertaking numerous initiatives to increase access to broadband connectivity throughout the province. The flagship projects within the broadband programme are further detailed below (DEDAT Annual Report 2016/2017).

- The Public Access Wi-Fi project is being delivered by the Western Cape Government's Department of Economic Development and Tourism in collaboration with Neotel. This project, which began in 2015/2016, seeks to deliver public internet access through Wi-Fi hotspots in wards across the province. The project delivered Wi-Fi hotspots to 128 wards throughout the province in the past year, and the total number of wards having a public hotspot by the end of the 2016/2017 financial year totalled 178. By the end of the 2017 financial year, a total of 102 963 people accessed the internet from these public hotspots.

- The Citizen Internet Champions project seeks to assist local communities with mobile digital literacy training. As part of this project, two locally sourced unemployed youth in each ward are taught how to deliver this mobile literacy training to other members of the ward community. By the end of the 2017 financial year, a total of 202 934 people had completed the mobile digital literacy course.

3.7 INFRASTRUCTURE AND THE BUILT ENVIRONMENT

The Western Cape Government's Property Efficiency Report is an annual publication that demonstrates the WCG's commitment to managing and improving the efficiency, effectiveness and sustainability of its property holdings. The report is compiled by the Western Cape Department of Transport and Public Works (DTPW) and, amongst others, determines the impact of water and electricity consumption in the department's building portfolio.

The WCG's building portfolio that was analysed in the report consists of 35 office buildings that are greater than 1000m^2 in size. The building portfolio consists of a combination of: **i)** Central Business District (CBD) owned property (41%); **ii)** CBD leased property (30%); **iii)** non-CBD leased property (18%); and **iv)** non-CBD owned property (11%).

The DTPW is engaging with landlords on the installation of energy meters and the implementation of "green leases" to address resource consumption at these premises. Focus thus far has been placed on CBD leased properties; resource efficiency of non-CBD properties will be addressed in the near future. Waste and waste recycling are earmarked for future inclusion within the annual report. Below is a synthesis of the environmental performance of the Western Cape's building portfolio[14] for the period from April 2016 to March 2017.

13 These are households with access to broadband via a mobile or landline.
14 The portfolio that is reported upon represents 35 office buildings within the Western Cape that are greater than 1,000m and either owned or leased-in.

ENERGY USE

The WCG's building portfolio has improved its energy efficiency by more than 17% over the last three years and 6% over the 2016/2017 financial year. In comparison, the private sector benchmark improved its energy efficiency by more than 10% over the past three years and 1,8% over the last financial year. The total electrical consumption per m^2 of the WCG's building portfolio decreased from 168kWh/m^2/pa in 2015/2016 to 158kWh/m^2/pa in 2016/2017.[15] The portfolio currently outperforms the private sector benchmark (246 kWh/m^2/pa) by more than 35%.

Cape Town CBD buildings

Energy efficiency in both CBD owned and CBD leased properties improved over the last year, and outperformed the CBD private sector benchmark. CBD owned properties were more energy efficient than CBD leased properties in the 2016/2017 financial year. The increased energy efficiency of CBD owned properties has been partly attributed to the installation of new remote meters, which has eliminated any potential data verification issues that may have occurred in the past. CBD leased properties, however, are seen to be less energy efficient than the private sector benchmark. However, where leased properties have separate meters per lessee, energy efficiency has outperformed the private sector benchmark. This further supports the benefits of the installation of remote metering.

Non-CBD buildings

Non-CBD leased buildings were more energy efficient in comparison to non-CBD owned properties in 2016/2017, with both property types outperforming the non-CBD private sector benchmark. Non-CBD buildings showed a slight improvement in energy efficiency in the 2016/2017 financial year in comparison to the 2015/2016 year.

WATER USE

The WCG building portfolio decreased its water consumption over the past year, from 1,14kL/m^2 per annum in 2015/2016 to 0,91kL/m^2 per annum in 2016/2017. Water consumption in the WCG's building portfolio has decreased by approximately 24% over the last three years and 20% over the last financial year. However, the WCG's building portfolio water consumption is still slightly above the private sector benchmark of 0,89kL/m^2 per annum in 2016/2017. Several challenges exist that have hampered water efficiency progress in WCG buildings, such as: **i)** ageing infrastructure; **ii)** lack of capital investment by landlords; and **iii)** data unavailability. Remote water metering devices are being installed by DTPW across the WCG's building portfolio, which will enable the calculation of more accurate water consumption data. In addition, DTPW are engaging with the City of Cape Town (CCT) to introduce bylaws that will ensure that landlords are required to measure the water that they resell.

Cape Town CBD buildings

In the CBD, WCG owned buildings were seen to be more efficient than leased buildings. Indeed, leased buildings in the CBD area showed a decrease in water efficiency over the past year by approximately 28%. This has been partly attributed to the increased water consumption at Grand Central, which is being investigated by the Department of Transport and Public Works. CBD owned buildings outperformed the CBD private sector benchmark in terms of water efficiency in 2016/2017, although WCG leased buildings in the CBD were less efficient than the private sector benchmark.

Non-CBD buildings

In non-CBD areas, WCG owned buildings are more water efficient than WCG leased buildings. Owned buildings in the non-CBD areas were more water efficient than the private sector benchmark in non-CBD areas, and showed a significant increase in water efficiency over the past year (1,62kL/m^2/pa in 2015/2016 and 0,70kL/m^2/pa in 2016/2017). In comparison, WCG leased buildings in non-CBD areas were less efficient than the private sector benchmark, and also decreased in water efficiency over the past year (1,04kL/m^2/pa in 2015/2016 and 1,35kL/m^2/pa in 2016/2017).

15 This figure does not include the energy consumption of the Elsenburg offices, due to the full year's consumption data for Elsenburg not being available at the time.

4 WESTERN CAPE GREEN ECONOMY INDICATORS

SOURCE: ©GreenCape. Image reproduced with permission from GreenCape

4.1 OVERVIEW OF THE WESTERN CAPE GREEN ECONOMY INDICATORS

This is the fourth annual report on the Western Cape Green Economy Indicators. As intended, these indicators are evolving to match shifting data availability, whilst at the same time providing year-on-year tracking of significant trends. Due to reporting delays of data, the indicators in the 2017 report reflect the 2015/2016 financial year. Indicator descriptions or values that have been updated from the previous report (2016) are indicated in the table below with an asterisk.

A range of indicators, across 11 different focus areas, are used to assess the progress of the Western Cape in driving and implementing its green economy strategy. A description of the indicator results for these focus areas is further outlined below.

CARBON

According to the Green Economy indicators, the carbon emissions per unit GDP in the Western Cape has increased by approximately 26% since 2012. However, carbon emissions in the Western Cape's energy sector decreased by approximately 12% between 2009 and 2015. According to the 2017 Western Cape Energy Consumption and CO_2e Emissions Database Report, electricity usage is the highest contributing energy source in the Western Cape, accounting for approximately 60% of total carbon emissions. In the "Air Quality' chapter of the Western Cape's State of Environment Outlook Report (SoEOR) 2014-2017, the source of carbon emissions for the province - as well as for the district/metropolitan municipalities - is further elaborated upon.

LAND

A total of 7,342ha of agricultural land was upgraded through conservation measures in the 2015/2016 financial year. This statistic refers to the number of hectares of agricultural land that is protected/ rehabilitated to improve agricultural production. According to the Department of Agriculture, this was achieved mostly through the construction of new farm boundary fences, which prevent predatory animals from entering sheep and goat farms. According to the State of Environment Outlook Report for the Western Cape Province (SoEOR), however, there has been a decrease in natural land cover and an increase in transformed and degraded land across the province between 2014 and 2017. For more context, see the "Land" chapter in the Western Cape's SoEOR 2014-2017.

WATER

Please see Section 3.2 ("Water and sanitation") of the Green Economy Report for an overview of the Western Cape Water Supply System's status. According to the SoEOR 2014-2017, there has been a decline in water availability for the Western Cape Province. Specifically, the report found that 12% of towns have inadequate yield and 27% of towns exceed their water supply allocation.

ENERGY

Total energy consumption in the Western Cape in 2015/2016 showed a slight decrease from the previous financial year. When analysed per sector, energy consumption in the agriculture and local government sectors also displayed a decrease from the previous year. However, the industry, transport, commerce, public services and residential sectors all displayed an increase in energy consumption over this period. In addition, the total contracted capacity for renewable energy in the Western Cape, through the REIPPPP initiative, has been increasing year on year. By the end of the 2016 financial year (March 2016), a total of 606MW had been procured and 377MW of this capacity was online. Approximately 90,2% of households in the Western Cape had access to electrical supply in 2015, which represents an increase in access of just over 2% since the previous year. The "Climate Change" chapter in the SoEOR 2014-2017 provides a more comprehensive overview of the Western Cape Province's greenhouse gas (GHG) emissions profile. Specifically, this includes statistics pertaining to: **i)** emissions by fuel source; and **ii)** emissions per sector. This information is also disaggregated per district/metropolitan municipality.

WASTE

The Western Cape has seen an increase in the amount of waste generated between 2015 and 2016. In addition, there has been a decrease in the percentage of waste diverted from landfill between 2015 and 2016: from 38% in 2015 to 16% in 2016. In 2016, the Overberg district performed best in terms of waste diversion, by diverting approximately 34% of their waste. This was followed by the City of Cape Town (19,18%), Eden District municipality (4,12%), West Coast District municipality (3,82%), Cape Winelands District municipality (2,88%) and the Central Karoo District municipality (2,01%). The "Waste Management" chapter in the SoEOR 2014-2017 provides a more comprehensive overview of the Western Cape Province's waste sector, with data and information disaggregated per district/metropolitan municipality.

ICT

Just more than half of the Western Cape's population (57,05%) has access to broadband connection, be it through a fixed broadband connection and/or a mobile connection. This represents an increase of just over 3% between 2014 and 2015.

SKILLS

On a national scale, the percentage of students who graduated from science and engineering faculties in 2015/2016 – as a proportion of the total graduates - was 41%, which represented a total number of 19 317 students.

AGRICULTURE

The percentage of agricultural and agri-processing exports - as a portion of the total provincial exports - decreased by just over 2% between 2014 and 2015. In addition, the 2015 percentage represented the lowest value since 2012. Agriculture and agri-processing exports refers to the percentage exports of agriculture, forestry, fishing, food, beverages and tobacco as a percentage of the total provincial exports.

HEALTH

The percentage of households with a measure of food insecurity decreased significantly between 2014 and 2015, by just over 12%. As such, a total of 13% of households in the Western Cape were food insecure in 2015. The percentage of households with access to sanitation decreased slightly between 2014 and 2015, such that 93% of households in the Western Cape had access to sanitation in 2015. Access to sanitation is defined as access to: **i)** a flush toilet connected to a public sewerage system; **ii)** flush toilet connected to a septic tank; and **iii)** a pit latrine/toilet with a ventilation pipe.

BIODIVERSITY

The percentage of land under conservation by CapeNature in the Western Cape increased slightly between 2014 and 2015. A total of 7% of the Western Cape's land area was under conservation estate in 2015, which represents an area of approximately 894,346ha. This statistic has been showing a gradual year on year increase since 2012. Yet despite this increase in CapeNature's area of land management, there has been a significant decline in the extent and state of the Western Cape Province's biodiversity areas. Specifically, there has been a loss of Critical Biodiversity Areas in excess of 19,000 ha in recent years, with the extent of habitat degradation increasing by 16% between 2009 and 2014. Further context and statistics can be found in the "Biodiversity and Ecosystem Health" chapter in the SoEOR 2014-2017.

4.2 TABLE 5: TABLE OF THE WESTERN CAPE GREEN ECONOMY INDICATORS.

INDICATOR CATEGORY	INDICATOR FOCUS	INDICATOR	UNIT	2012 VALUE	2013 VALUE	2014 VALUE	2015 VALUE
NATURAL RESOURCE BASE	Carbon	Percentage change in carbon emissions against 2009 baseline. Data is for energy sector only.	Percentage (%)	-17,8%*	Data is reported biennially. No data for 2013.	Data not yet available.	-12,1%
	Land	Agricultural land improved through conservation measures annually.	Hectares (ha)	27,359ha	29,076ha	18,036ha	7,342ha
	Water	Total water supply versus total water demand.	Volume (m^3)	Supply: 596,000,000m^3 Demand: 510,201,000m^3	Supply: 596,000,000m^3 Demand: 508,100,000m^3	Supply: 596,000,000m^3 Demand: 547,260,000m^3	Information not readily available.
RESOURCE PRODUCTIVITY	Carbon	Carbon emissions for energy sector.	Carbon-equivalent emissions (CO_2e)	Emissions for energy sector: 36,345,753.00tCO_2e Emissions per unit GDP: 82tCO_2e/million units GDP*	Data is reported biennially. No data for 2013.	Data not yet available.	Emissions for energy sector: 38,901,581.00tCO_2e Emissions per GDP: 103tCO_2e/million units GDP
	Energy	Total energy consumption	Gigajoule (GJ)	276,333,250GJ	No data for 2013/2014 financial year.	316,251,814.16GJ	299,401,472GJ
	Energy	Energy consumption by sector.	Gigajoule (GJ)	Industry: 85,383,982.29GJ Transport: 146,296,369.73GJ Agriculture: 6,968,221.23GJ Commerce and Public Services: 10,921,301.41GJ Local Government: 2,111,886.20GJ Residential: 24,652,304.95GJ	No data for 2013/2014 financial year.	Data not yet available.	Industry: 87,530,766GJ Transport: 161,817,293GJ Agriculture: 5,092,440GJ Commerce and Public Services: 14,430,141GJ Local Government: 1,561,059GJ Residential: 28,969,771GJ
	Energy	Energy consumption per unit GDP.	Gigajoule (GJ)/million units GDP	629GJ/million units GDP*	Data is reported biennially. No data for 2013.	Data not available yet.	792GJ/million units GDP.
	Energy	Energy consumption per capita.	Gigajoule (GJ)/capita	46GJ/capita*	Data is reported biennially. No data for 2013.	Data not available yet.	48GJ/capita
	Energy	Total energy produced from renewable sources by independent power producers.	Megawatt (MW)	133.40MW	421.82MW	497.00MW	606.0MW**
	Waste	Municipal solid waste generated annually.	Tonnes	3,807,765 tonnes	No data	2,922,190 tonnes	4,067,982.20 tonnes
	Waste	Waste diverted from landfill annually.	Percentage	9%	Data is reported biennially. No data for 2013.	38%	16%
	Water	Green Drop Score	Percentage	84,5%	No data for 2013.	No data for 2014.	No data for 2015.

Table continues on next page

INDICATOR CATEGORY	INDICATOR FOCUS	INDICATOR	UNIT	2012 VALUE	2013 VALUE	2014 VALUE	2015 VALUE
SOCIO-ECONOMIC	Broadband Connectivity	Percentage households with access to broadband connection	Percentage	54,3% (StatsSA)	54,4% (StatsSA)	53,9% (StatsSA)	57,05% (StatsSA)
	Skills	Percentage students graduating from science and engineering faculties.	Percentage	40,4%	41,0%	41,2%	41,0%***
	Sustainable Agriculture	Percentage agricultural and agri-processing exports as a portion of total provincial exports.	Percentage	48,95%	55,07%	50,81%	48,22%
	Aquaculture	Total value of aquaculture sector.	Rands	R405 million	R538,56 million	Data not available.	Data not available.
		Total annual tonnage produced by the aquaculture sector.	Tonnes	2,574.00 tonnes	3,352.35 tonnes		
ENVIRONMENTAL QUALITY OF LIFE	Carbon	Modal split for passenger transport.****	Percentage	Private transport: 52% Public transport: 48%	Private transport: 52% Public transport: 48%	Private transport: 52% Public transport: 48%	Private transport: 48% Public transport: 52%
	Carbon	Percentage of total volume of land freight haulage by rail.	Percentage	N1: 3,2% N2: 0,9% N7: 3,4%	N1: 45,2% N2: 4,1% N7: 0,0%	No data available.	No data available.
	Energy	Percentage households with access to energy.	Percentage	90,5%	89,3%	87,6%	90,15%
	Health	Percentage households with a measure of food insecurity.	Percentage	21,3%	22,7%	25,5%	13,27%
	Health	Percentage households with access to sanitation	Percentage	95,6%	94,8%	94,6%	93,21%
POLICY AND FINANCE	Biodiversity	Percentage land under conservation	Percentage	6,40%	6,54%	6,81%	7,0%
	Energy	Cumulative value of renewable energy projects financed by national and international green/climate funds.*	Rands	R3.22 billion	R8.024 billion	R380 million	R3.74 billion
	Aquaculture	Annual value of capital investment in aquaculture	Rands	R241 million	R36.7 million	No data available.	No data available.

KEY:

* Indicator figures/indicator description has been updated from the 2016 Green Economy Report.

** This refers to the total contracted capacity for renewable energy in the Western Cape, through the REIPPPP. As of March 2016, 377MW of this capacity was online (IPP Office, 2017).

*** This statistic applies to the national scale (i.e. across South Africa).

**** This statistic refers to the City of Cape Town region.

5 THE GREEN ECONOMY IN WESTERN CAPE MUNICIPALITIES

SOURCE: James-Brent Styan
Beaufort West Gamka Dam, November 2017

5.1 GREENEST MUNICIPALITY COMPETITION

Municipalities throughout the country, at both a district and municipal level, are at the forefront of having to deal with environmental, social and economic impacts. In addition, these municipalities are responsible for basic service provision - often with limited budget available, and a small local economy. Climate change impacts are exacerbating these service delivery pressures upon municipalities. As such, innovative measures – which depart from business-as-usual approaches – need to be implemented to ensure that local economic development is supported, green economies are stimulated and service delivery is improved.

The Greenest Municipality Competition (GMC) is a national initiative that seeks to encourage and showcase innovative projects and programmes that municipalities across the country are undertaking. Specifically, the objectives of the GMC are to: **i)** encourage municipalities to mainstream environmental sustainability into their planning and programmes; **ii)** promote green technologies; **iii)** provide a platform for showcasing environmental best practice; and **iv)** promote networking and dialogue on climate change and sustainable development.

The annual Greenest Municipality Competition (GMC) awards ceremony in the Western Cape was held on 27 November 2017. These awards seek to recognise both local and district municipalities for their innovation in addressing environmental challenges in their regions. Specifically, elements that were evaluated in the GMC included: **i)** waste management; **ii)** climate change response; **iii)** biodiversity management, coastal management and beautification; **iv)** water management and conservation; **v)** air quality management; and **vi)** leadership, compliance, institutional arrangements and public participation. The awards ceremony was hosted by Anton Bredell: the Provincial Minister of Local Government, Environmental Affairs and Development Planning. Minister Bredell stated that municipalities are central to the success of any initiative that seeks to address the challenges of climate change and resource efficiencies.

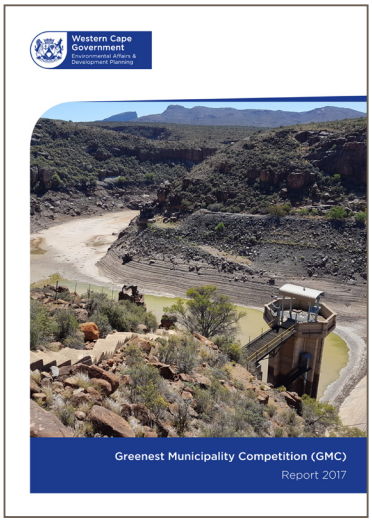
"Our budget priorities and our local infrastructure plans work both ways – either preparing us for natural disasters such as the drought, or exposing us to risk. We are heartened by the many worthwhile initiatives across the province, such as water tanks to harvest our rainfall, the clearing of alien vegetation from our catchment areas, and the diversification of our water supply sources." – Minister Anton Bredell

Premier Helen Zille attended the event and stressed the importance of a whole-of-society approach to addressing environmental challenges, and the important role that municipalities play in "driving the behavioural change required for sustainable development, because they are at the coal face of service delivery."

Table 6: Results of the 2017 Greenest Municipality Competition

MUNICIPAL CATEGORY	1ST PLACE	2ND PLACE	3RD PLACE
LOCAL MUNICIPALITIES	Swartland	Overstrand	Hessequa
DISTRICT MUNICIPALITIES	Eden District	Overberg District	West Coast District

For more information, visit:



Click here:
2017 Greenest Municipality Competition Report

PROJECT WINNERS IN THE ENVIRONMENTAL INNOVATION CATEGORY OF THE GMC AWARDS

Overberg District Municipality: Environmental Management Criteria

The Overberg District Municipality have developed a set of environmental criteria for development applications in terms of their Spatial Development Framework. These criteria cover environmental threats to endangered habitats, water sources and drainage patterns, natural resources, visual integrity and other climate change related adaptation considerations.

Saldanha Bay Municipality: Recovery and Recycling of Old Fishing Nets

The Saldanha Bay Municipality has a partnership with a private company called Retrawl. Retrawl is an EU initiative that seeks to upscale the use of innovative recycling technology so as to transform used maritime waste into high quality plastic and steel commodities. This partnership arrangement entails the municipality collecting and baling old fishing nets which are no longer suitable or safe for use. These old fishing nets are then exported to Denmark where the materials are recovered and recycled.

Stellenbosch Municipality: Installation of Molok Units

The Stellenbosch Municipality have installed three Molok units in the Klapmuts, Kayamandi and Langrug informal areas. These units are an upgrade on traditional skip systems, which are placed in communal areas for waste collection. The Molok unit is a vertical waste container that is situated partially underground. The design of the Molok unit offers several benefits over traditional skips in that it saves space, minimises unpleasant odours, can hold more waste and needs to be emptied less frequently. Stellenbosch Municipality have installed Molok units that have a 5,000 litre capacity each, which is equivalent to the capacity of 21 wheelie bins.

Stellenbosch Municipality: Non-Motorised Tricycle Project

Two departments within the Stellenbosch Municipality – Solid Waste and Local Economic Development – collaborated for the implementation of a non-motorised tricycle project. As part of the project, custom built tricycles are fitted with a container that can carry up to 75kg of material. The project provides numerous benefits to the municipality by: **i)** supporting local SMEs, whilst creating jobs and stimulating the waste economy; **ii)** minimising the cost of waste collection and recovery operations of the municipality; and **iii)** reducing the municipality's carbon footprint through the promotion of non-motorised transport.

Mosselbay Municipality: Installation of Rooftop Photovoltaic Systems at Municipal Offices

A 29,3kWp rooftop PV system was installed at the two offices of the Municipal Technical Services Department at a cost of R2,2 million. The new photovoltaic system consists of 117 solar panels and makes use of batteries to store electricity and ensure the self-sustainability of the building's power supply. These offices now generate sufficient power to run both the municipal offices and also equipment that ensures the town's electricity, water supply and sewerage systems operate optimally. This photovoltaic system is saving up to 80% of the energy consumed by the Technical Services Department buildings, and is expected to generate around 100kWh from the sun over a period of 24 hours. This installation is directly connected to the municipal electrical grid and allows for excess power to be exported back onto the grid via a bi-directional, four quadrant electronic meter.

Overstrand Municipality: Rethink the Bag

The Overstrand Municipality's Environmental Management Department, in collaboration with the Solid Waste Department, implemented a campaign whereby plastic shopping bags are banned from municipal buildings. Employees are encouraged to use reusable bags and all municipal employees have been issued with a reusable bag.

Overstrand Municipality: Outsourcing of Overstrand Municipal Bulk Water and Waste Water Works

The Overstrand Municipality outsourced the operations and maintenance of all 8 of its water treatment plants and 5 waste water treatment plants to the private sector for a period of 15 years. The main purpose of this outsourcing is to effectively and efficiently operate and maintain bulk water services, with an emphasis upon: **i)** the provision of appropriate skills and expertise; **ii)** driving efficiencies; and **iii)** asset preservation.

Swartland Municipality: The Replacement of Streetlights in Class A and Class B Roads

The Swartland Municipality invested R286,606 from its own internal budget in energy efficient LED-type streetlights, to replace existing inefficient mercury vapour and high-pressure sodium type streetlights. Due to the improvement of technology and the reduced cost of LED lights, this initiative is both cost-effective and results in a short pay back period. This project is achieving an annual saving in energy consumption of approximately 2,842,197kWh.

Swartland Municipality: Conversion of Electrical Water Heating Systems to Solar Water Heaters at Municipal Sports Fields.

Electrical water heating systems were replaced by solar water heating systems at the Moorreesburg Rozenhof sports field and the Darling Gabriel Pharoa sports field. A new system was installed at the Malmesbury Westbank sports field.

Swartland Municipality: Malmesbury Waste Water Treatment Works and Highlands Landfill

Membrane technology is being used in the Malmesbury WWTW for a broad range of water treatment and water purification processes. As part of the process, treated waste water is abstracted through a membrane at low pressures. The final effluent is reused for the irrigation of sports fields and by the agricultural sector.

The lifespan of the Highlands Landfill site has been significantly increased due to the efficiency of the Materials Recovery Facility (MRF) operating in conjunction with the disposal facility. Benefits of this system include the creation of 41 permanent jobs within the local community, and an increase in the lifespan of the landfill to 33 years as of 2017.

5.2 CITY OF CAPE TOWN GREEN BONDS

In July 2017, the City of Cape Town auctioned its inaugural R1 billion green bond in a closed bidding process. The market response to this bond was positive, where 29 investors made offers totalling R4.3 billion in response to the R1 billion bond that was being sold[16]. The green bond was certified by the Climate Bonds Initiative, and Moody's Ratings Agency awarded the bond a GB 1 rating ("Excellent").

The projects that will be funded by the green bond are a mix of adaptation and mitigation initiatives, and include: **i)** the procurement of electric buses; **ii)** energy efficiency in buildings; **iii)** water management initiatives (water meter installations and replacements, water pressure management and the upgrade of reservoirs); **iv)** sewerage effluent treatment; and **v)** rehabilitation and protection of coastal structures.

16 http://www.capetown.gov.za/Media-and-news/Green

6 APPENDIX 1: ADDITIONAL NOTES ON GREEN ECONOMY INDICATORS DEFINITION AND SCOPE

SOURCE: Scott Ramsay
CapeNature: Kogelberg Nature Reserve

INDICATOR CATEGORY	INDICATOR	ADDITIONAL NOTES ON DEFINITION AND SCOPE	DATA SOURCE AND CONTACT
NATURAL RESOURCE BASE	Percentage change in carbon emissions against the 2009 baseline.	Data is for energy sector and limited waste emissions only (i.e. it excludes AFOLU emissions). In 2009, emissions in the Western Cape totalled 44,261,200 tCO2e. Percentage change is calculated as: absolute change in emissions /2009 emissions. Negative value indicates a decrease in carbon emissions relative to the 2009 baseline.	Lize Jennings-Boom Department of Environmental Affairs and Development Planning: Climate Change Directorate.
	Agricultural land improved through conservation measures annually.	This statistic refers to the number of hectares of agricultural land that is protected/rehabilitated to improve agricultural production.	Francis Steyn Western Cape Department of Agriculture Department of Agriculture's Annual Report: 2015/2016
	Total water supply versus total water demand.	Data not available.	
RESOURCE PRODUCTIVITY	Carbon emissions for energy sector.	This excludes emissions from Agriculture, Forestry and Other Land Use, as well as Industrial and Waste emissions.	Lize Jennings-Boom Department of Environmental Affairs and Development Planning: Climate Change Directorate.
	Total energy consumption	This information is drawn from the Western Cape Government Energy Consumption and CO2 Emissions Database for the Western Cape.	Lize Jennings-Boom Department of Environmental Affairs and Development Planning: Climate Change Directorate.
	Energy consumption by sector.	WCG follows the Department of Energy in the use of the Standard Industrial Classification codes.	Lize Jennings-Boom Department of Environmental Affairs and Development Planning: Climate Change Directorate.
	Energy consumption per unit GDP.	The unit of measurement conforms to national reporting practices.	Lize Jennings-Boom Department of Environmental Affairs and Development Planning: Climate Change Directorate.
	Energy consumption per capita.	The unit of measurement has been changed to conform to national reporting practices.	Lize Jennings-Boom Department of Environmental Affairs and Development Planning: Climate Change Directorate.

Table continues on next page

INDICATOR CATEGORY	INDICATOR	ADDITIONAL NOTES ON DEFINITION AND SCOPE	DATA SOURCE AND CONTACT
RESOURCE PRODUCTIVITY	Total energy produced from renewable sources by independent power producers.	This value represents the total, cumulative amount of renewable energy that has been procured in the Western Cape through the REIPPPP (as of March 2016).	IPPPP Report: March 2016
	Municipal solid waste generated annually.	This value represents the total amount of solid waste generated annually by the six district/metropolitan municipalities in the Western Cape in 2016.	Eddie Hanekom Department of Environmental Affairs and Development Planning: Waste Management
	Waste diverted from landfill annually	This represents the total percentage of waste diverted from landfills in the Western Cape in 2016.	Eddie Hanekom Department of Environmental Affairs and Development Planning: Waste Management
	Green Drop Score	The Green Drop score is a weighted score for municipal wastewater. The audit assesses the entire value chain involved in municipal wastewater services including collection, treatment and discharge of sewerage.	Department of Water and Sanitation
SOCIO-ECONOMIC	Percentage households with access to broadband connection	Statistics were calculated using the StatsSA 2015 General Household Survey data for the Western Cape. Statistic refers to the percentage of households that have access to either: i) fixed broadband; or ii) mobile broadband.	Gavin Miller Western Cape Department of Social Development
	Percentage students from science and engineering faculties.	This statistic applies across South Africa, and not specifically to the Western Cape province. The statistic is a reflection of the percentage of students who graduated in 2015 from: i) engineering; and ii) natural and physical sciences.	Department of Higher Education and Training Annual Report: 2016/2017.
	Agricultural and agri-processing exports as a percentage of total provincial exports.	The 2012, 2013 and 2014 figures have been updated from previous reports. Agriculture and agri-processing exports refers to the percentage exports of agriculture, forestry, fishing, food, beverages and tobacco as a percentage of the total provincial exports.	Andrew Partridge Department of Agriculture
	Total value of aquaculture sector.	Data not available.	
	Total annual tonnage produced by the aquaculture sector.	Data not available.	
ENVIRONMENTAL QUALITY OF LIFE	Modal split for passenger transport.	This statistic is only for the City of Cape Town. Statistics can be found in the Executive Summary of the Comprehensive Integrated Transport Plan 2013-2018 (2015 Review), which can be downloaded from the following link: https://www.tda.gov.za/en/resources/strategies-plans-and-frameworks/strategies-and-plans/	Sivuyile Jokazi City of Cape Town: Transport Planning
	Percentage of total volume of land freight haulage by rail.	The Western Cape Department of Transport and Public Works does not have any freight modal datasets beyond 2014.	Stacey-lee Marais Western Cape Department of Transport and Public Works.
	Percentage households with access to energy.	Statistics were calculated using the StatsSA 2015 General Household Survey data for the Western Cape. Statistic refers to the percentage of households with access to a mains electricity supply.	Gavin Miller Western Cape Department of Social Development
	Percentage households with a measure of food insecurity.	Statistics were calculated using the StatsSA 2015 General Household Survey data for the Western Cape. Statistic refers to the number of households who are “sometimes”, “often” and “always” food insecure.	Gavin Miller Western Cape Department of Social Development
	Percentage households with access to sanitation	Statistics were calculated using the StatsSA 2015 General Household Survey data for the Western Cape. Statistic refers to the percentage of households with access to: **i)** a flush toilet connected to a public sewerage system; **ii)** flush toilet connected to a septic tank; and **iii)** a pit latrine/toilet with a ventilation pipe.	Gavin Miller Western Cape Department of Social Development
POLICY AND FINANCE	Percentage land under conservation	This statistic refers to the conservation estate of CapeNature, which is the area of land in the Western Cape that is managed by CapeNature. This area of the conservation estate is 894,346 ha.	CapeNature Annual Report 2015/2016.
	Cumulative value of renewable energy projects financed by national and international green/ climate funds.	This value was calculated by applying the Western Cape’s percentage share of the overall value of renewable energy projects in the country, to the total amount of investment in renewable energy in South Africa from foreign investors and financiers. (7% x R53,4 billion = R3,74 billion).	IPPPP Report: March 2016
	Annual value of capital investment in aquaculture.	Data not available.	

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