
GreenCape Annual Report 2016/17



GreenCape

GreenCape is a non-profit organisation that drives the widespread adoption of economically viable green economy solutions from the Western Cape. Our vision is for South Africa to be the green economic hub of Africa.

We work with businesses, investors, academia and government to help unlock the investment and employment potential of green technologies and services, and to support a transition to a resilient green economy.

Acknowledgements

We thank the GreenCape team for their contributions to the content in this annual report. We thank Nicholas Fordyce and Salomé Bronkhorst for the time and effort that went into compiling the report.

Disclaimer

While every attempt was made to ensure that the information published in this report is accurate, no responsibility is accepted for any loss or damage that may arise out of the reliance of any person or entity upon any of the information contained in this report.

GreenCape does not endorse or directly support any one company, brand or enterprise. We provide free market intelligence, an advocacy platform and networking opportunities for all our stakeholders across several sectors.

© Image courtesy of Acciona Energy: a wind tower section being raised during installation, symbolic of the rise of a new energy sector in the country.

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Table of contents

| | |
|------------------------------|----|
| Abbreviations and acronyms | 6 |
| Foreword by the CEO | 8 |
| GreenCape 2016/17 highlights | 11 |
| Agriculture | 18 |
| Bioeconomy | 24 |
| Energy | 30 |
| Skills development | 36 |
| Waste | 40 |
| Water | 46 |
| WISP | 52 |
| Our Funders and Partners | 56 |

Abbreviations & acronyms

| | | | | | |
|-------------------|--|---------|--|----------|--|
| AMEU | Association of Municipal Electricity Utilities | GIZ | Deutsche Gesellschaft für Internationale Zusammenarbeit (German Society for International Cooperation) | SANEDI | South African National Energy Development Institute |
| ASD | Agriculture Sector Desk (GreenCape) | | | SANRAL | South African National Roads Agency |
| AWT | Alternative waste treatment | | | SAPVIA | South African Photovoltaic Industry Association |
| C&DW | Construction and demolition waste | GWO | Global Wind Organisation | SAQA | South African Qualifications Authority |
| CEA | Controlled environment agriculture | HCRW | Health care risk waste | SARETEC | South African Renewable Energy Technology Centre |
| CEO | Chief Executive Officer | ICN | International Cleantech Network | SAREBI | South African Renewable Energy Business Incubator |
| CLEAN | Danish Cleantech Cluster | IDC | Industrial Development Corporation | SAWEA | South African Wind Energy Association |
| CoCT | City of Cape Town | IPA | Investment Promotion Award (UNCTAD) | SEZ | Special Economic Zone (dti) |
| CO ₂ e | Carbon dioxide equivalents | | | SMEs | Small and medium enterprises |
| CSP | Concentrated solar power | IWMP | Integrated Waste Management Plan | SMMEs | Small, medium and micro-sized enterprises |
| CTP | Climate Technology Program (World Bank) | MIR | Market Intelligence Report (GreenCape) | SOLTRAIN | Southern African Solar Thermal Training and Demonstration Initiative |
| DBSA | Development Bank of Southern Africa | NRS | National Rationalised Specifications | SSEG | Small-scale embedded generation |
| DEADP | Department of Environmental Affairs and Development Planning (WCG) | OEMs | Original equipment manufacturers | TVET | Technical and Vocational Education and Training |
| DEDAT | Department of Economic Development and Tourism (WCG) | PPP | Public-Private Partnership | WC | Western Cape |
| DGS | Deutsche Gesellschaft für Sonnenenergie e.V. (German Solar Energy Company) | PV | Photovoltaics | WCG | Western Cape Government |
| DOA | Department of Agriculture (Western Cape) | QCTO | Quality Council for Trades and Occupations | WISP | Western Cape Industrial Symbiosis Programme |
| dti | Department of Trade and Industry | RE | Renewable energy | WMA | Water Management Area |
| DWS | Department of Water and Sanitation | REIPPPP | Renewable Energy Independent Power Project Procurement Programme | WWF | Worldwide Fund for Nature |
| ESCO | Energy service company | SABIA | South African Biogas Industry Association | | |
| ESCos | Energy service companies | SACREEE | South African Centre for Renewable Energy and Energy Efficiency | | |
| EV | Electric vehicle | SADC | Southern African Development Community | | |
| EVIA | Electric Vehicle Industry Association | SALGA | South African Local Government Association | | |
| GHG | Greenhouse gas | | | | |



Foreword by the CEO



Supporting the business of green: driving green economy solutions from the Western Cape

The announcement by Moody's in 2016 that South Africa had the fastest growing green economy in 2015, highlighted the country's progress towards an economy that is low carbon, resource efficient and socially inclusive.

This annual report, GreenCape's very first, highlights some of the work by GreenCape and our partners to help further drive that growth in the Western Cape in 2016. With immense gratitude to our funders, this report focuses on institutional and team achievements and on developments in the water, energy, waste, agriculture and bioeconomy sectors.

GreenCape's vision, when it was established with two staff members in 2010, focused on positioning the Western Cape to be the green economy hub of Africa. Looking back on this vision seven years later, I am very proud of the impact we have had and delighted by developments across the provincial green economy.

The number of green economy projects that we track in the province has grown exponentially, from 40 in 2010 to nearly 300 in 2017. National data also shows that 60% of project developers and 70% of component manufacturers in the government's Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) are based in Cape Town. It is a telling indicator that the Western Cape market for component manufacturing amounts to R2.1 billion out of a national market worth R3 billion. Investors and businesses have shown further confidence in the province, with R680 million already invested by companies setting up in the proposed Atlantis SEZ, which has an investment pipeline of over R2 billion.

Some of the highlights in this report provide further evidence of the province's leading green economy role, such as the opening of Africa's largest waste-to-energy plant (with a value of R400 million) in Cape Town; the global \$17.5 million expansion of a local waste-to-protein producer; and the 3.4 return on investment from our WISP programme. The Western Cape is also leading the embedded generation revolution, with 15 out of 25 municipalities adopting rules and regulations to allow customers to feed energy back into the grid. The rules and regulations developed by GreenCape are now a national standard to be used by municipalities across South Africa.

From 2017, it is GreenCape's ambition to position Cape Town, the Western Cape and South Africa as the green economy hub of Africa.

Our team of over 40 sector experts and analysts, with backgrounds in engineering, economics, business, finance, environmental science and other disciplines now have nearly seven years of experience across various green economy sectors. The team relies on green economy principles to promote a lower carbon, more socially inclusive and resource efficient economy. We have applied these principles in our work with businesses, government and academia to provide market intelligence, technical support, advocacy, knowledge, networking opportunities and a range of other support over the years. At GreenCape we also constantly

improve ourselves internally, and we have met our target of diverting over 80% of our office waste. This year, GreenCape has registered for BBBEE. As a public benefit organisation (PBO), we are a proud Level 1 BBBEE contributor.

GreenCape has also been invited to be the first African member of the International Cleantech Network (ICN), a network of world-leading cleantech regions. The ICN has partnered with the C40 Cities, a network of the world's megacities committed to addressing climate change, to create a city solutions platform to exchange best practice on greentech infrastructure.

From 2017, we will draw on this experience and our role in international networks to help achieve our new vision. We will make knowledge, information, networks and technical solutions available nationally and even globally. We will promote home-grown solutions to problems and support the growth of a thriving manufacturing industry in the green economy.

We could not have done the work to date, and will not be able to achieve our new vision, without GreenCape's enthusiastic, hard-working, passionate and dedicated team. You are truly our greatest asset.

To our funders, thank you for your support. GreenCape has relied on support from our funders and partners well beyond financial contributions. They participate in steering committees, work groups, task teams, game-changers, workshops and events. Without this ecosystem of support across tiers of government and across many departments, the goals of becoming a green economy hub would be impossible. With continued and new partnerships, it is possible for South Africa to be a leader in the global green economy, and be a resource for fellow African countries trying to leapfrog to sustainable infrastructure and economies.

Mike Mulcahy



GreenCape 2016/17 Highlights

"It is not only the friendly, helpful and highly professional interaction with GreenCape that has been impressive, but the pro-active continuing assistance without needing to be asked. Initiating any new project has its own challenges - GreenCape helps make the journey easier. Highly recommended."

William Chapman, founder Advanced Hydroponic Systems.

01

By Numbers

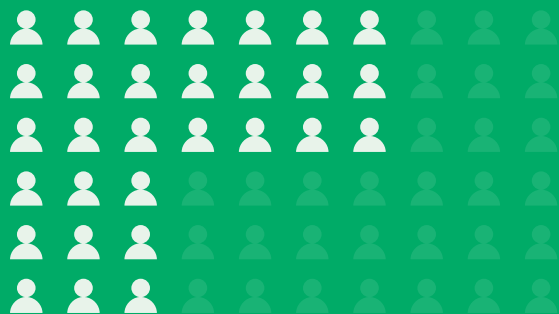


293 WC green economy projects by 2017, up from 40 in 2010

300

jobs created in the Atlantis SEZ

1 = 10



"Thank you again for the discussions during the Green Drinks event, as well as conversations with the other GreenCape members. We also find your market intelligence reports useful – we recently approached external consultants for similar information, but found it lacking in depth in comparison to GreenCape's. Your reports have allowed us to focus our efforts on the portion of industry most aligned with our service offering on both public and private levels."

Scott Alexander, DRA
Projects

1 641

sector engagements with industry this year



R680m

of investments secured in the Atlantis Greentech SEZ since 2013 with an additional R2 billion in the investment pipeline by 2020

10 000

local jobs created through RE investments

43 wind turbine technicians trained by SARETEC

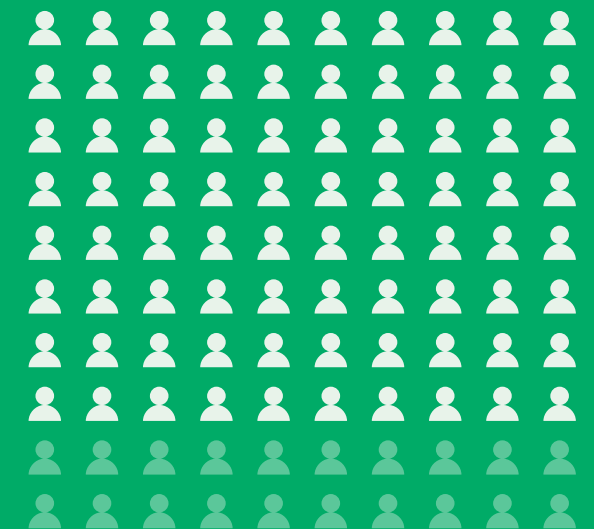
32 500

downloads of market intelligence reports

800+

registered GreenCape members

1 = 10



R17.5bn

of investments facilitated and supported in renewable energy projects



02

WISP Impacts

2013-2017



R3.40 returned to the economy for every R1 invested in WISP

“Other companies should also join WISP. They provide practical solutions and really understand waste management and industrial symbiosis. We were matched to local companies, which has helped us connect with and give back to the community through the waste we produce.”

Ayanda Dalingozi, Cape Town Film Studios

R12m
additional revenue for businesses

R11m
saved by businesses

107
economy-wide jobs created

1 = 1



25 100
tonnes greenhouse gas emissions saved

4 950
tonnes waste diverted from landfill

03

Green Economy Investments

R400m
waste-to-energy plant opens in Cape Town

New Horizons Energy, a waste-to-energy business, aims to revolutionise the country's waste management approach through renewable energy. GreenCape provided pre-investment technical support and will work with other municipalities to roll out similar projects.

Fast facts:

5% potential contribution to City's liquid petroleum gas needs

500 tonnes of organic household, industrial and commercial waste used daily

83
jobs created already

1 = 10



\$17.5m

Cape Town based waste-to-protein producer secures \$17.5m for global expansion

Agriprotein is a waste-to-protein solution provider that uses black soldier fly larvae to process pre- and post-consumer food waste into insect protein, used in fish and livestock feed. The innovative solution provider has secured funding to support its global expansion into Asia, Australia, Europe and the Americas.

WISP has supported AgriProtein through linkages to organic waste suppliers (WISP synergies divert 850 tonnes of organic waste to insect production per annum). More broadly, GreenCape has facilitated linkages to animal feed markets in Norway through the development of a business case highlighting the opportunities for bioconversion of organic waste to insect protein for animal feed.

Fast facts:

9 000m²
factory space in Cape Town

8.5 billion
flies are produced in Cape Town

250
tonnes of waste recycled daily

50
tonnes of larvae produced daily

International Cleantech Network (ICN) holds annual conference in Cape Town

The ICN Annual Conference was held in Cape Town in May 2016. The event was co-hosted by GreenCape (the first African member of the ICN) during Africa Utility Week (AUW).

AUW, which took place over three days, hosted over 6 000 delegates and 80 African utility companies, and gave international cleantech investors the opportunity to network. For ICN members from North America and Europe there was time to attend AUW, engage in a full day of strategic networking, and visit a number of renewable energy facilities.

Other Highlights

05

Energy Transformation

Small-scale embedded generation (SSEG) rules, regulations and tariffs developed by GreenCape are now a national guideline to be used by municipalities across the country – a South African first.

15 municipalities in the Western Cape have applied for SSEG tariffs.

10 municipalities have approved tariffs, with rules and regulations already drafted.

- Rules, regulations and tariffs have played a role in promoting 120% growth in a number of approved installations in the City of Cape Town (CoCT) between May and December 2016.
- A total of 32 MW worth of Photovoltaics (PV) installations installed.
- This year saw the publication of the NRS 049-2, or smart meter specification. It will allow municipalities to procure smart-meters with prepaid functionality. This will encourage a faster uptake in embedded generation.

06

Sustainable Agriculture

GreenAgri website helps farmers farm more sustainably

The GreenAgri Portal acts as a hub for farmers to share updates and best practice, and to access tools, tips and information on laws and regulation. Since its launch in September 2015, the site has assisted nearly 10 000 visitors. The majority of users have been from South Africa, although there have been several international users from the United States, the United Kingdom, Germany, India and Kenya.

07

Alternative Waste Management

GreenCape project grows the informal waste sector

GreenCape is collaborating with organisations that already work with informal waste pickers on a project that will identify and test interventions to improve working conditions, including a review of the volumes and value of materials recovered by waste pickers. The project's findings will inform decisions by local municipalities when engaging or working with the informal sector.

08

Skills Development

Wind turbine and solar PV service technician qualifications have been registered by the South African Qualifications Authority (SAQA); 43 wind turbine technicians have been trained by SARETEC, most already absorbed in the wind industry.

New concentrated solar power (CSP) qualification has been developed, awaiting Quality Council for Trades and Occupations (QCTO) approval and SAQA registration.

PV installation Greencard programme developed with the South African Photovoltaic Industry Association (SAPVIA), allowing better vetting of installers' competency.

09

Technical Support

Helping municipalities take the best waste decisions

GreenCape's waste team has been instrumental in supporting the development of the Stellenbosch Municipality's 2017 – 2022 Integrated Waste Management Plan (IWMP). The team used the IWM Decision Support Tool (DST) to do a fact-based evaluation of a number of possible scenarios for the municipality's waste management future. This helped calculate the true cost of waste and alternative waste management. The ultimate aim is to see fact-based planning in IWMPs allowing municipalities to budget appropriately for waste management.

The team has also developed a technical guide for technology identification and screening. Commissioned by the Western Cape Government, the guide focuses on providing support for municipal IWM planning by serving as a first-level screen for technology selection. Training and workshops on the technical guide have been held with DEADP officials and with the Overberg District and Western Cape Provincial Waste Management Officers' Forums.

Helping Saldanha to simplify development decisions

GreenCape's water team has developed a tool with and for the Saldanha Bay Local Municipality, to help improve decision-making involving water allocation. The tool is used to score competing development proposals by combining a series of criteria such as potable water usage, usage of treated effluent, local job creation and environmental impact. GreenCape has also been invited to be part of Saldanha's 'smart water team', looking into how to use treated effluent and water more effectively with the aim of becoming a zero-discharge municipality.



10

Awards Received

WISP & Waste teams awarded for exceptional service

WISP and Waste have won the Chairman's Award for Exceptional Service by the Institute of Waste Management of Southern Africa. GreenCape's WISP and Waste teams have received the award for their outstanding contribution towards waste minimisation, recycling and diversion of waste from landfill.

GreenAgri portal recognised at the M&G Greening the Future Awards

The GreenAgri website was the runner-up in the Mail & Guardian Greening the Future Awards in the competition's Innovations for Climate Change Adaptation category. The Awards, held in July 2016, recognised the best environmental projects of the year as selected by the judges.

GreenCape awarded for investment promotion

GreenCape, with InvestSA and Wesgro, has won the UNCTAD Investment Promotion Award at the World Investment Forum. This prestigious UN award recognises the success of the partnership in attracting investment in the South African green economy.

"GreenCape, INVESTSA and Wesgro... have used innovative and effective methods to persuade key domestic and international investors. These [agencies] offer real examples of how developing countries can benefit from the ability to attract investment, likely to make an increasingly important contribution to socio-economic development."

James Zhan, Director of the Division on Investment and Enterprise at UNCTAD, on presenting the award to GreenCape, INVESTSA and Wesgro.

New: World Bank Market Connect and Finance Lab project

The World Bank Market Connect and Finance Lab seeks to mitigate market inefficiencies for small and growing green businesses in emerging countries. South Africa is the first country in this programme and GreenCape is the project manager, while running the Cross Border pilot and providing technical advice on the Green Outcomes Fund pilot.

The Cross Border pilot, launched in September 2016, is an innovative matchmaking solution linking international multinationals looking for local partners in the green SME space. The pilot will run for 12 months.

GreenCape is also assisting a consortium partner, the Bertha Centre for Social Innovation and Entrepreneurship, with its finance-related pilots as part of the overall programme. This includes a Green Outcomes Fund that provides concessionary funding to investors of green SMEs upon realising green targets. Specifically, GreenCape has assisted in innovating green metrics for SMEs. This Green Outcomes Fund has the potential to be a great benchmark on various fronts, not only in SA but elsewhere as a possible prototype and proxy.

Cumulative results at the time of writing:

- Assisted more than 5 foreign inbound cleantech delegations and over 40 green companies over 4 months.
- 5 letters of intent between companies have been signed, while repeat delegations from trade offices are being planned.
- 1 partnership agreement has been signed, bringing a new company to South Africa.

11

Atlantis SEZ for Green Technologies

Steady progress on designation of proposed Atlantis Greentech Special Economic Zone

A proposal has been submitted for the Atlantis Industrial Area to be declared a Greentech Special Economic Zone (SEZ). This year the SEZ Project Team (led by GreenCape), together with the City of Cape Town and the Western Cape Government (WCG), have resolved a number of technical and legal questions posed by SEZ technical boards. Designation is expected in 2017.

Investors show strong interest in investing in the zone

The SEZ has already attracted R680m of investment and created 300 jobs. Companies that have invested so far include Gestamp Renewable Industries (wind towers), Resolux Africa (wind tower internals), Skyward Windows (double-glazed windows) and Kaytech (geotextiles).

21 new investors have shown significant interest in the SEZ and negotiations with many of them are in an advanced stage. The highest investment value is from foreign investors.

177 engagements by the SEZ project team with investors, stakeholders and skills development beneficiaries.

Industrial symbiosis and business development support grow Atlantis businesses and entrepreneurs

WISP has continued its resource efficiency work in Atlantis, achieving over R7m worth of financial benefits and launching an enterprise development programme in conjunction with the South African Renewable Energy Business Incubator (SAREBI). SAREBI has incubated 38 companies and has held four Master Classes and multiple pitching sessions for prospective entrepreneurs.

12

Outreach

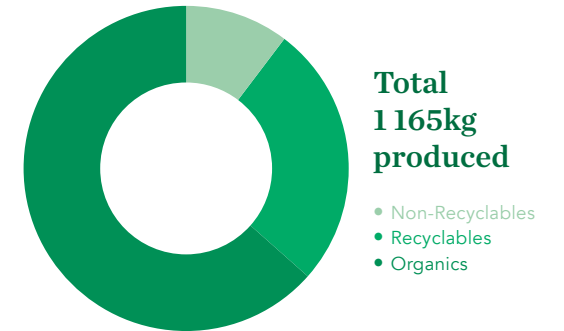
GreenCape team contributes to improving Atlantis matric pass rate

GreenCape staff are currently working with the IkamvaYouth programme in Atlantis, volunteering their time to tutor high-school learners.

GreenCape recycles over 90% of the waste it generates

GreenCape is committed to recycling and diverting office-generated waste in an environmentally friendly manner. With a target to recycle 80% of waste, the Waste@Home programme makes a conscious impact on our office footprint. Over the past financial year GreenCape has generated 1.2 tonnes of office waste with 90% of it separated for recycling.

Waste at Home 2016/17:



13

Driving Internal Innovation

GreenCape Dragons' Den project leads to innovative solutions

GreenCape hosted an internal innovation event, the Dragons' Den Project, where staff developed project proposals which were pitched to the rest of the office. Seven different project proposals were presented, all focusing on critical sector issues or opportunities identified by the teams. Two proposals received unanimous support from the GreenCape team – an abattoir waste project, and one on non-revenue water. The projects will be rolled out in 2017.



© Western Cape Department of Agriculture

"The GreenCape agriculture team has (in some cases, literally) taken green economy solutions through the farm gate, to achieve help farmers achieve greater sustainability. They have done this with problem-solving and needs driven solutions and information."

Dr. Ilse Trautmann, Chief Director: Research and Technology Development, Western Cape Department of Agriculture



© GreenCape

Agriculture



3000+

downloads of
Agri MIR

9479

visitors to Green
Agri portal

About

The agri team, in collaboration with the Department of Agriculture (DOA), drives the greening of agricultural value chains in the Western Cape (WC) in two ways:

- Grow the market for green technologies, systems and processes in agriculture and agri-processing.

- Develop sustainable and competitive agricultural value chains.

This work is done through the **GreenAgri portal**, a website on sustainable agriculture for farmers in the Western Cape, and the work of the **Agriculture Sector Desk (ASD)**.

The desk provides market intelligence, advocacy and networking opportunities to investors, businesses and farmers in the agriculture sector.

Our Work (2016/17)

Promoting sustainable agriculture

The sector desk has been working with the DOA to promote the GreenAgri portal and the services offered by the sector desk. They have done this by way of media articles, newsletters, road shows, and presentations and attendance at symposia and the African Agri Investment Indaba (1 000 attendees). More than 850 attendees at events in George, Prince Albert, Ceres (to name a few) have received information on the portal.

Broadening the reach and influence of the ASD

In order to fully realise its sector development potential, the desk has been building strong relationships with the private and public sectors, including the South African National Energy Development Institute (SANEDI), VinPro (wine industry association), and the Province's Red Tape Reduction Unit.

"We find that the GreenAgri portal is user-friendly and current, and does an excellent job of keeping the agri industry informed. Your response times and ability to create connections between people are excellent and very valuable to the industry. It is always a pleasure to work with the friendly and professional team at GreenCape."

Anél Blignaut, Confronting Climate Change - Fruit & Wine Industry Initiative & Bluenorth

Team Highlights

GreenAgri portal wins innovation award

GreenCape's GreenAgri website has been named runner-up in the Innovations for Climate Change Adaptation category of the Mail & Guardian Greening the Future Awards competition.

GreenCape agriculture team publishes market intelligence report on sustainable agriculture

The 2016/17 report, focused on sustainable agriculture, is written for green tech manufacturers and suppliers, and farmers. Read by over 3 000 sector players, the opportunities identified have been shared through various forums, including SANEDI Agriculture Stakeholder Platform and Sustainable Energy Consumption and Production training events.



© Western Cape Department of Agriculture

Helping farmers sow seeds of sustainability

The GreenAgri website for farmers is updated on a weekly basis with new information, research and legislation pertaining to sustainable agriculture practices and technology.

The site hosts important projects and information sources:

- the WC Drought Summit information
- the SmartAgri (Smart Agriculture for Climate Resilience) project
- Fire Protection Agencies mapping tool
- new online tools in agriculture
- new funding and incentives.

The ASD has also seen an increase in the number of stakeholders using the GreenAgri website as a means of communication.

Since its launch in September 2015, the site has assisted nearly 9 500 visitors. Farmers have benefited from the launch of the GreenAgri portal, which has received 9 479 users (September 2015 – 22 March 2017), with 64.7% of them being new users.

For the most recent quarter (1 January – 31 March 2017), there have been 1 872 users. In addition to farmers, there has also been an increasing number of businesses and service providers making contact through the GreenAgri portal to identify tools, applications and new technology to support sustainable agricultural production.

The most visited pages are:

- The Cape Farm Mapper, developed by the DOA, is a free web-based mapping application that provides access to spatial databases and web services. Users can see where different types of farming are done in the Western Cape, with info on rainfall patterns, temperatures, spatial evaporation patterns, geology and much more.
- Articles on a wide range of topical issues.
- The SmartAgri Plan, a WC Government (WCG) plan to guide and support the creation of greater resilience to climate change for farmers, agri-businesses and other stakeholders across the province.

Sector Highlights

Controlled environment agriculture shows steady growth in Western Cape – attracts new investment

The Western Cape has seen healthy growth in the uptake and use of controlled environment agriculture (CEA) in rural and urban areas. Various types of CEA are practised in the Western Cape, ranging from netting cover and tunnels to more technical hydroponic systems.

CEA has the potential to reduce the risks associated with the impacts of climate change and increase the WC's agri-processing output,, a key sector highlighted by both provincial and national government for improved job creation and economic growth. The current baseline market estimate for the WC is valued at R28 million (for low-tech CEA) to R600 million (for high-tech CEA), with growth predicted to be ~15% per annum. High-tech solutions can result in as little as 5% of the water needs of traditional agricultural practices.

Western Cape welcomes its first indoor hydroponics system for use by Aqua Vegetables

In the past financial year, the WC welcomed it's first producer of leafy green vegetables using indoor hydroponic systems. Used by Aqua Vegetables, it is an investment facilitated by GreenCape. Aqua Vegetables produces an array of leafy greens, including micro herbs. The project will have an estimated value of R2 million in five years and will create two permanent jobs.



Market Opportunities

The team's 2016/17 Agriculture MIR highlighted the following opportunities:

- **Solar irrigation:** R2.9 billion SA market, assuming a 10% uptake by existing farmers (commercial and smallholder)
- **Solar energy for packhouses:** R1 billion potential WC market, assuming 20% uptake by current packhouses
- **Conservation agriculture:** R114 million market with potential of up to R1 billion in SA market
- **Sustainable agriculture value chain:** Markets for tools, data analysis, machinery rentals, local manufacturing, financing
- **Controlled environment agriculture:** R600 million market with potential for 15% annual growth in the Western Cape
- **Precision agriculture:** Technologies and services to improve water and energy efficiency.



© GreenCape



© GreenCape

Bioeconomy



© GreenCape



850t

organic waste diverted from landfill to insect protein production

75

jobs created at New Horizons Energy biogas facility

About

The bioeconomy team works to unlock the economic growth and job creation potential of the province's bio-based resources, and to promote the 'greening' of agricultural value chains. The aim is to:

- **add value to residues and wastes in food value chains** by enabling organic residues and wastes to be used sustainably for further economic benefit;
- **improve resource efficiency** so that the agriculture and agri-processing sectors use resources like water, energy and raw materials more efficiently, i.e. doing more with less;
- **promote investments in renewable energy** in agri-processing so that the sector operates more sustainably, while growing the renewable energy sector.

Our Work (2016/17)

Adding value to residues and wastes in food value chains with the objective to:

- identify food value chains with substantial potential for added value in the Western Cape through a strategic scoping study;
- support waste generators to add value to organic residues and wastes through workshops, networking platforms and active facilitation efforts.



© GreenCape

Supporting renewable energy uptake in food value chains with the objective to:

- support packhouse owners and operators to investigate the economic feasibility of solar PV systems (industry brief and workshop);
- support the sustainability of the agro-processing sector and development of the local solar thermal industry by highlighting solar thermal as an economically feasible source of heat (framing paper and workshops);

- support biogas industry development by:
 - helping project developers overcome market barriers (through market intelligence, business connections, strategic and technical support), and
 - helping organic waste generators assess the viability of biogas as a waste management solution (decision support tool).

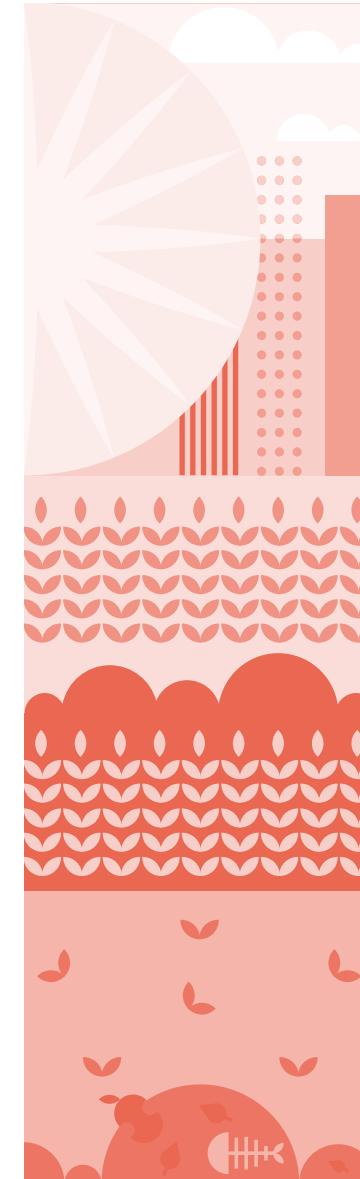
“GreenCape and organisations like yours are key enablers of our work to add value to organic wastes in the Western Cape.”

**Brent Adonis,
Two A Day Group**



© GreenCape

Team Highlights



Strategic scoping study highlights significant value-adding potential in red meat, fruit and vegetable value chains

The team’s study has identified significant value-adding potential to abattoir, fruit and vegetable residues and wastes. For example, when used for insect production, and ultimately as a protein source in animal feed, the potential economic benefits are estimated at between R0.8 billion and 1.9 billion and R1.7 billion for fruit and vegetable wastes and abattoir wastes, respectively.

Industry dialogue shows substantial local interest in adding value to fruit and vegetable residues and wastes

A range of added value opportunities in fruit and vegetable value chains have been explored at a workshop for industry, government and universities, co-hosted by the Green Chemistry Centre for Excellence of York University and the Chemistry Department of the University of Cape Town. A number of business-to-expert and business-to-business links have been established to explore and promote opportunities.

Team supports diversion of organic waste to higher value producer to international markets

GreenCape has facilitated the diversion of 850 tonnes per annum of organic waste from landfill to insect protein production. The team has also helped a local insect production company to potentially enter markets in the EU and South America through GreenCape’s networks and membership of the International Cleantech Network (ICN).

Business case on industrial scale solar thermal shows technology’s viability

Industry is showing considerable interest in this GreenCape business case, which has been presented as an industry brief. For example, a textile industry case study shows an eight-month payback on solar thermal when replacing heavy fuel oil. This highlights the strong business case for solar thermal, particularly in sectors requiring preheating or low temperature heat such as agri-processing.

Team develops pre-feasibility biogas decision support tool for organic waste generators

The tool helps potential uptakers assess the financial viability of biogas, considering a range of variables, including waste type and quantity, use of energy outputs, and type of financing available.

200
factories to be rolled out by 2027 by an insect protein manufacturer

R1.67 billion
potential economic benefit from redirecting abattoir waste for insect production

Sector Highlights

Local insect feed manufacturer secures partnerships in Europe

After reading a GreenCape business case on value-add to organic waste, a Norwegian agri-tech cluster organisation invited a local insect protein feed manufacturer to an annual agriculture conference. As a result, the manufacturer has accessed broad EU markets and networks. The company is now part of efforts to initiate a pilot insect production plant in Norway, and has access to R&D exchanges and opportunities to test their product for Norwegian salmon. In another unrelated development, the same insect protein manufacturer aims to roll out 200 factories with a global partner by 2027.

Local insect protein manufacturers in bid to provide solutions to cities in Americas and Australia

Four local companies in bid to provide innovative solutions for major cities in the USA, South America and Australia. The Platform is a joint effort by C40, the Danish Cleantech Cluster (CLEAN), and the International Cleantech

Network (ICN). It supports early engagement between cities and the private sector to accelerate the deployment of innovative climate solutions.

Solar thermal initiative receives funding for third phase

SOLTRAIN (the Southern African Solar Thermal Training and Demonstration Initiative), which supports regional governments in national solar thermal roll-outs, has been extended for a third phase. Among others, this will provide for industry support, skills development and finance for demonstration projects.

New Horizons Energy launches the largest biogas waste-to-energy facility in Africa

This project has unlocked R400 million in green tech investment and created 75 jobs. GreenCape has provided wide-ranging strategic and practical support to the project developers.



Market Opportunities

- **Organic waste management and value addition:** stricter waste disposal laws and landfill diversion targets create opportunities across the value chain.
- **Higher value-add technologies (e.g. biogas and rendering):** demonstration facilities are needed to help instill confidence in these technologies.
- **Upgrading organic residues and wastes to protein-rich animal feed** through insect production could provide significant economic benefits, particularly for abattoir wastes.
- **Industrial and commercial renewable energy installations:** clarity on energy service company (ESCO) offerings will address perceptions of capital cost constraints.

What's To Come

GreenCape project to develop bioeconomy in Langeberg

The Langeberg Municipality has an agriculturally driven economy with a number of organic waste generators in the area. The municipality has begun setting more stringent municipal waste regulations, declaring that organic wastes (particularly abattoir wastes) will no longer be accepted at the municipal landfill. This affects business competitiveness due to

higher waste management costs, and ultimately the livelihoods of employees and their dependants.

The Langeberg organics project aims to address this organic waste management challenge by facilitating the uptake of organic value-adding initiatives to encourage the formation of a resource-efficient and competitive local bioeconomy system.

The Langeberg project is the result of a "Dragons' Den" competition that saw GreenCape staff pitching a number of projects. These were then shortlisted through a peer-review process. Watch this space in 2017/18 for information, including details of a multi-stakeholder workshop to explore value-adding opportunities for livestock value chains. The workshop is to be hosted in partnership with the Netherlands government.



"GreenCape's steering committees and advisory groups are where experts on a topic come together to evaluate the hard work done by the GreenCape team, to critique it and to provide possible leads for making it better. The experiences are rewarding, as the quality of GreenCape's work is good and there is a fantastic spirit of team work coupled with a jointly held intent to make life in the province better for all."

Prof. Harro von Blottnitz,
University of Cape Town



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Energy



© GreenCape



15

WC municipalities
adopt SSEG rules
and regulations

15 000+

downloads of
both energy
MIRs

About

GreenCape's energy team works to increase energy efficiency and the supply of cleaner energy. In doing so, the team helps to create jobs and grow the economy. Sector

experts and analysts focus on utility-scale renewable energy, embedded generation, energy efficiency, sustainable transport and green energy financing.

Our Work (2016/17)

Through two market intelligence reports, workshops, advocacy, facilitation meetings, knowledge sharing work, development of rules and regulations, working with the appliance sector, input into national standards, a resource pack for CEOs, and technical and operational support to government and industry associations, the team has been:

Supporting and growing the utility-scale renewable energy sector with the objective to

- secure new investments and growth in the entire energy value chain
- help key players understand changes to REIPPPP local content rules
- facilitate smoother green immigration for RE sector skills
- remove barriers to sector growth
- grow the wind energy sector.

Supporting and growing the energy services sector with the objective to

- secure new investments and growth in the energy efficiency and embedded generation value chain
- enable SSEG in municipalities
- support growth in the appliance sector through sharing of opportunities in energy efficiency appliance labelling with 45 energy efficiency members

- help manufacturers and technology developers engage with government and the public.

Developing the low-income electricity space

The team has started to work on creating a replicable model for alternative service delivery in the low-income market that can be rolled out in the rest of Africa. The model takes into account and will test social, financial and technical solutions.

Reducing provincial demand on the national grid

The team has provided technical advice and support to the City of Cape Town and the WCG's Energy Security Game Changer in the form of market insights, technical evaluations and modelling of a) demand-creation tariffs, b) time-of-use tariffs, and c) embedded generation feed-in tariffs.

Broadening the reach and influence of the energy sector desk

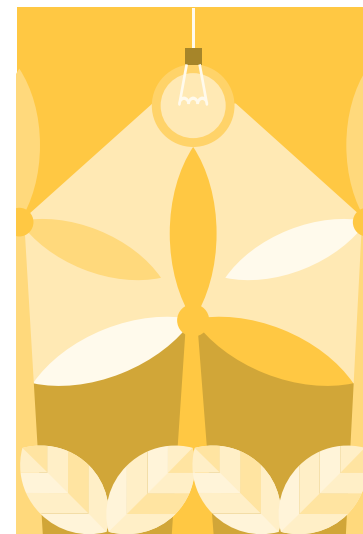
The desk has developed relationships nationally and internationally with, amongst others, the World Bank, Department of Energy, SANEDI, GIZ, SAWEA, Department of Trade and Industry, IDC, DBSA, SADC Centre for Renewable Energy and Energy Efficiency, and Slum Dwellers International.

Developing an energy service model for Atlantis Industrial Area

The team has developed a model to determine the potential for solar PV generation capacity in the Atlantis industrial area. This forms part of ESCo work to deliver alternative, renewable energy for the Atlantis SEZ.

Supporting sustainable transport growth

As a new focus area, the team has worked to develop an understanding of barriers and opportunities, and to clarify GreenCape's role in creating an enabling environment for growth of the sector. This has been done through wide engagement with industry, government and academia. The team has also focused on the emerging electric vehicle (EVs) market, a major contributor to a sustainable transport sector. GreenCape is now part of the Electric Vehicle Industry Association (EVIA). The City of Cape Town (CoCT) has invited representation from GreenCape to contribute to the City's sustainable transport plan.



Team Highlights

GreenCape's energy team publishes two market intelligence reports – read by more than 15 000 businesses and investors

The Utility Scale Renewable Energy market intelligence report targets potential and current investors in South Africa's utility-scale renewable energy programme, exploring issues around achievement of localisation objectives embedded within the programme, socio-economic development opportunities that the sector holds, challenges to the development of the market, and a general update on the programme's development to date. The RE MIR has been downloaded 11 000 times since February 2016.

The Energy Services report focuses on the smaller scale energy market, specifically energy efficiency and embedded generation. Both reports cover market overviews, major opportunities, barriers and a comprehensive list of 'green' focused funds and incentives.

Energy team develops SSEG rules and regulations – implemented by 15 Western Cape municipalities

The team has developed rules and regulations for Western Cape municipalities for SSEG uptake. These rules have now been adopted widely, and shared nationally through the AMEU and other forums.

National smart meter standard published – energy team leading development

The development of a national standard will ensure the availability of locally manufactured smart meters, at greatly reduced prices, thereby improving the business case of small scale embedded generation systems. The standard will enable municipalities to procure smart meters without fear of technology lock-in, which in future will also enable systems such as home automation, demand-side management and the introduction of time-of-use (ToU) tariff regimes.



Market Opportunities

The team's utility-scale and energy services MIRs have identified the following market opportunities:

- **Solar PV Systems and components:** 500 MWp installed capacity and R2 bn investments predicted (2016-2019).
- **Local manufacturing and assembly of Solar PV systems and components:** systems require compliance with local content regulations.

- **Energy efficiency retrofitting:** 100 000+ public buildings require retrofitting.

- **Independent Power Production:** ministerial determination for 6.3 GWp additional renewable energy generation capacity – 1.1 GW (670 MW wind; 450 MW solar) per annum.

- **Utility-scale renewable energy:** Local manufacturing opportunities through REIPPPP local content requirements.

- **Utility-scale renewable energy in the rest of Africa,** with some programmes mirroring REIPPPP.

"We commend your water and energy teams for the excellent research they do, and for the market intelligence and knowledge they produce – we always look forward to your annual market intelligence reports. The GreenCape analysts are professional and helpful and we appreciate the periodic meetings, where the team shares updates on various market issues, projects and programmes being launched in the sector."

**Dominic José Goncalves – VP Business Development,
Abengoa E&C (Abeinsa) South Africa**

Skills Development



About

GreenCape's skills development team aims to create a labour force, trained in accordance with international standards and qualifications, for the renewable energy sector and, more broadly, the green economy in South Africa.

"We appreciate GreenCape's support on education, training and quality assurance in the embedded solar PV space. Your work has helped to grow new businesses, creating sustainable jobs in the green economy."

Niveshen Govender, SAPVIA Programme Manager

Our Work (2016/17)

Developing quality assurance mechanisms for PV Solar Installers

GreenCape's skills development team has developed a PV Solar Installer quality assurance voluntary "test" in co-operation with SAPVIA, City of Cape Town, DGS, GIZ Pretoria's SAGEN Programme and SARETEC.

Developing a formal qualification for Biogas Installation Operation Service and Maintenance Technicians

The team has started the development process of a QCTO format occupational qualification in close co-operation with the South African Biogas Industry Association (SABIA), GIZ Pretoria SAGEN Programme, and SANEDI.

Promoting the global uptake of SARETEC training offerings

The team has promoted SARETEC training with international Wind Turbine OEMs such as GE, SIEMENS, NORDEX/ Acciona, VESTAS, Enercon and Gold Wind.

Playing a leadership role in renewable skills development

The team chairs the Skills Working Group for the South African Wind Energy Association (SAWEA).





43

wind turbine
technicians trained
by SARETEC

Sector Highlights

- **43 Wind Turbine Service Technicians have been trained by SARETEC** so far, most of whom have been absorbed by the growing local wind industry.
- **SAPVIA has developed a PV installation Greencard programme**, a quality measure for the solar industry that allows vetting of installers' competency.

What's to Come?

- Biogas Technician short training courses at SARETEC
- Development started of QCTO-format qualification for Biogas Installation Operators and Maintenance Technicians.
- Awaiting approval and registration of the Concentrated Solar Power Technician Training qualification.
- Introduction of Global Wind Organisation BMT (Basic Maintenance Training) at SARETEC and a network of private training institutions and selected TVET Colleges.
- The delay in the REIPPPP programme opens the opportunity for an extension of the SARETEC Reach for Wind and PV Solar training to Southern Africa, and particularly to the East African Renewables Corridor.

"The GreenCape staff have greatly inspired and motivated the learners to keep working on their dreams. GreenCape has definitely planted hope in the community of Atlantis"

Simone Peinke and Yanga Totyi, Ikamva Youth

"The GreenCape team have gone above and beyond the role of funder for the Atlantis Ikamva Youth branch. Their hands-on approach has enhanced our ability to deliver a high-impact educational support programme to the youth of Atlantis. Their high level of involvement has fostered the development of a network of valuable, trusting relationships within the community, which has laid a solid foundation for a sustainable afterschool programme."

Simone Peinke and Yanga Totyi, Ikamva Youth



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Waste



© Averda



3000+

downloads of the
waste MIR

R25m

health care risk
waste treatment
plant to start
construction in
June 2017

About

GreenCape's waste team aims to develop the circular economy in the Western Cape. To this end, the team supports the growth of a thriving, legally compliant and labour absorptive secondary materials industry in the Western Cape.

The team provides direct business engagement services via the sector desk. The team also address systemic challenges that prevent the uptake of alternative treatment technologies and the use of secondary materials.

Our Work (2016/17)

Supporting and growing the waste and secondary materials sectors

The Waste Sector Desk's focus over the last year has been to:

- provide support and advice to the waste industry
- support existing waste stakeholders and new entrants (especially SMMEs) to respond to changes in legislation and to capitalise on opportunities
- provide market intelligence to increase the local processing potential of recyclers
- strengthen existing relationships with relevant industries and their associations.

The team has made it their business to understand the opportunities and barriers to investment in green technologies, systems or processes that contribute to reducing waste in the region. This has been done by wide sector engagement with stakeholders (business, government, academia, and NPOs) in the waste and secondary materials industries.

Supporting investments in alternative waste treatment technologies

The team's Waste Economy Project aims to increase investments in alternative waste treatment (AWT) technologies, and the parts of the secondary materials value chain that are economically viable and beneficial for the Western Cape's economy. The team aims to achieve the following results:

- **Facilitate private sector access to municipal solid waste** by developing a technical guide for municipalities. The guide helps local municipalities make decisions about appropriate AWT solutions. DEA has been trained in using the guide to assist municipalities when developing their Integrated Waste Management Plans. In addition, the team has provided technical advice to municipalities for Public Private Partnerships (PPPs).

• Grow the uptake of construction and demolition waste in building and construction

through the development of a business case, an industry brief, guidelines for inclusion of secondary materials in roads, and a pilot project with key stakeholders in the sector.

Supporting and understanding the informal waste sector

The team has worked to identify and test interventions that could lead to increasing the volumes and value of materials recovered, and to better working conditions for those in the informal waste sector. Harrington Street Buyback Centre has been chosen as a partner in the trial. Project findings will help inform municipal engagements with the informal waste sector.

"Thank you for an excellent meeting ... it was one of the best meetings we have been to in a long time. We keep on being surprised by GreenCape's team, what you are doing, and how you are going about getting things done!"

**Dr Gerard van Harmelen,
Director, Meganika**



Team Highlights

GreenCape Waste team publishes market intelligence report – read by over 3 000 sector businesses and investors

The report outlines how the waste management landscape is changing, and the opportunities it presents for businesses and investors to expand the waste management sector.

Builders' rubble market thriving in Cape Town – GreenCape facilitating market development in roads

The waste team is working to develop national best-practice guidelines for the application of builders' rubble in roads. This work is done with a range of stakeholders, including the South

African National Roads Agency (SANRAL), universities, various provincial government departments, the private sector and industry associations. The team's work is aimed at developing builders' rubble as a useful secondary construction material and resource, not as waste.

Waste team value chain analysis identifies opportunities and markets for secondary materials

Drawing on the team's understanding of material flows in the Western Cape, the team identified opportunities to substitute imported materials with local secondary materials, and to expand export capacity by similarly growing current manufacturing.

GreenCape to support Eastern Cape municipality with sector development

GreenCape's waste team has been asked to provide sector development support to the East London Industrial Development Zone and Buffalo City Metropolitan Municipality. This includes assistance in understanding the landscape; guiding a waste characterisation process and the development of Terms of Reference for an Integrated Waste Management Plan; and identify key opportunities.

Sector Highlights

Fluorescent lamp to landfill ban stimulates demand for recycling

The banning of fluorescent lamps from landfill in August 2016 has meant that lamps need recycling or treatment prior to disposal. One recycler (out of only two in SA) is investigating the expansion of a Cape Town storage depot to a recycling facility.

Integrated waste management facility and biogas plant opens in Athlone

The Athlone Integrated Waste Management facility and New Horizons Energy's biogas plant opened in January 2017. The R400 million facility is the first of its kind in Africa and will process approximately 500 to 600 t/d of municipal solid waste of which 200 to 300 t/d will be diverted to the biogas plant.

Health care risk waste treatment plant to open in Atlantis – awaiting licence

Ozonator is in the process of establishing a health care risk waste (HCRW) treatment plant in Atlantis. Construction of the R25 million plant will start in June 2017, pending approval of a waste management licence.



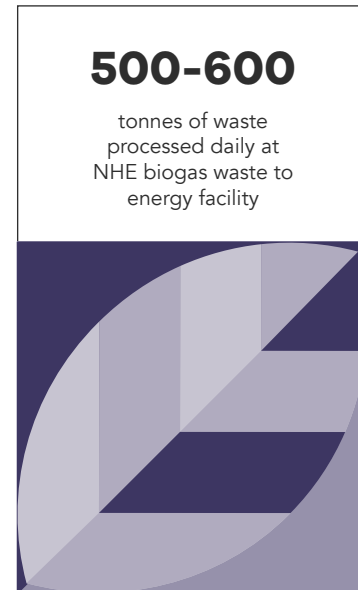
Market Opportunities

The waste team has identified the market and job creation potential of various waste streams in the Western Cape:

- **Paper:** R150 million, 190 jobs
- **Plastics:** R550 million, 1 150 jobs
- **Glass:** R47 million, 19 jobs
- **Metal:** R241 million, 308 jobs
- **Ewaste:** R54 million, 1,690 jobs
- **C&DW:** R88 million, 500 jobs

Other opportunities for businesses and investors include:

- **Municipal Public-Private Partnerships:** PPPs can potentially unlock R1.3 billion of investment and create 1 600 jobs over the next five years.
- **Legislation** to unlock the potential R25.2 billion/pa of material that could be recycled in South Africa.
- **Industry Waste Management Plans requirement from Department of Environmental Affairs:** It will increase the availability of materials for the secondary materials sector. The plans, required from June 2017, are for the paper and packaging, electrical and electronic equipment, and lighting industries.



"GreenCape fills an interesting niche area in the green economy landscape in South Africa, of practical translation of evidence into action."

Professor Linda Godfrey, Manager, Waste RDI Roadmap Implementation Unit, CSIR



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Water



© Western Cape Department of Agriculture



4000+

downloads of
water MIR

41

different forums
attended with
engagements
with over 2161
attendees

About

The goal of GreenCape's water team is to help create jobs, grow investments in the water sector, and help achieve sustainable use of water in the Western Cape Province.

The aim is to:

- improve the productive use of water to support sustainable economic development by providing technical support to municipalities and water sector stakeholders

- promote the uptake of green technologies to grow businesses in the water value chain through wide-ranging support to the water business sector.

The team's sector experts and analysts work to achieve these outcomes by way of:

- market research and intelligence activities
- networking and matchmaking businesses
- cleantech advocacy
- research into the economic opportunities and constraints of water.

Our Work (2016/17)



Supporting and growing the water business sector

The water team attended, and gave presentations at, 42 different forum meetings with altogether 2 161 attendees. The forum content and topics varied from presentations on the latest technologies in water saving, water cleaning and smart metering, to water footprinting, meetings with government departments such as DWS, DEADP, DOA and DEDAT, water resource financing, and academic presentations. The majority of the forums were held within the Western Cape, although the water team did attend other national and international forums.

The team undertook these engagements to:

- establish and strengthen relationships with key sector stakeholders;
- develop sector insights through relationship building, networking and research, and participating in and contributing to key sector forums;
- communicate and share water insights and opportunities.

The team has also published a market intelligence report on water for green-solution or technology manufacturers, suppliers of and investors in water technologies and systems, and businesses.

Providing technical support to municipalities and stakeholders in the water sector

with the objective to:

- reduce the water consumption of industries by promoting solutions that include reuse, recycling and resource recovery technologies, as part of its Industrial Water Reuse Project (scoping phase);
- help government decision-makers and municipalities make complex water-related development decisions through completion of the Water for Economic Development Project;
- help municipalities reduce non-revenue water by developing a guide and pre-feasibility assessment in partnership with the South African Local Government Association (SALGA) and Laingsburg Municipality.

"Your team has grown into a reliable node of knowledge and coordination in the renewable and green sectors. Your energy and passion for the sector is clearly evident, and it is a pleasure working with you. I regard your Water Desk as a trusted partner for knowledge sharing."

Dawid Bosman, Trans-Caledon Tunnel Authority (TCTA)



Team Highlights

GreenCape water team publishes market intelligence report – read by over 4 000 businesses and investors

GreenCape's Water Sector Market Intelligence Report highlights business opportunities for water in the green economy in the Western Cape. It is written for green- solutions or technology manufacturers, suppliers of and investors in water technologies and systems, and businesses.

Water team helps government decision-makers forecast future water requirements and developmental impacts

GreenCape's Water for Economic Development project, which is focused on Saldanha Bay and

the Berg River WMA, is nearing completion. The water team is developing tools and guidelines to help government decision-makers and municipalities make complex water-related development decisions through illustrating the socio-economic benefits of water allocation and access

Water team helps Saldanha to prioritise development decisions

The team has developed a tool with and for the Saldanha Bay Local Municipality officials that will help them prioritise water for the 'best' development projects. The tool is used to score competing development proposals by combining a series of scores based on criteria such as potable

water usage, treated effluent usage, local job creation and environmental impact. The water allocation tool fulfils their short-term smart-water management requirements, providing them with an implementation option for prioritising their current water requests.

Water teams starts project on industrial water reuse

The project aims to reduce the water consumption of industries by promoting solutions that include efficiency, reuse, recycling and resource recovery technologies, as part of its Industrial Water Reuse Project, currently in scoping phase.

Sector Highlights

Drought drives the water agenda and sustainability efforts in the Western Cape

The Western Cape is experiencing a serious drought, with the City of Cape Town declaring Level 3B water restrictions for the first time ever in 2016/17. The upshot is that water scarcity is now a high priority topic, generating interest from government, industry and the private sector. The GreenCape water team has been central to some developments.

GreenCape and the WC Minister for Economic Opportunities co-hosted a First Thursdays business showcase event on water saving technologies in February 2017. It showcased

water cleaning, water saving and smart metering technologies from 11 different corporations. The event, attended by more than 150 people, also served as the launch of the 2017/18 Water MIR.

With the drought a significant public concern, the GreenCape team has also given presentations to a number of forums, conducted radio interviews (Cape Talk) and had articles published (Big Issue) on the impacts of the drought and the business opportunities it presents.

The team has found that growing water scarcity and rising tariffs improve the business case for water security investments, with businesses

and investors starting to tap into opportunities. For instance, the team has identified the following developments:

- **Industrial investments in effluent treatment technologies**, because municipalities have become more stringent about effluent discharge quality.
- **Rising implementation of industrial water efficiency processes**, with industry recognising water availability as a risk to operations.
- **Growth in resource recovery from effluent**, such as whey from dairy processing.

Market Opportunities (2017/18)

In the 2017 Water Market Intelligence Report (MIR), compiled on the basis of insights acquired in 2016, opportunities identified by the team include:

- **water reuse, recycling and resource recovery**: manufacture, assembly and supply of treatment and reuse components and systems; services and products related to industrial symbiosis; recycling and resource recovery could offer opportunities of as much as R600 million in the Western Cape market.
- **energy used for water treatment and conveyance, and water used for energy generation**;
- **understanding and managing consumption**: end-users and utilities are driving 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 in innovative rain-, storm- and greywater storage, new groundwater resources, managed aquifer recharge and brackish and seawater desalination;





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WISP



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4950

tonnes waste diverted from landfill

R3.40

returned to the economy for every R1 invested in WISP

About

The Western Cape Industrial Symbiosis Programme (WISP) is a free facilitation service that has been operating since 2013. WISP builds a network of companies so that under-utilised resources (materials, energy, water, assets, logistics and expert knowledge) of one company can be used by another. WISP's facilitators help

companies add value to what they might see as 'wastes' by finding new uses for these materials in the WISP network, by way of synergies between companies. In this way, waste materials contribute to the economy, rather than being landfilled.

"All companies should join WISP. They have the experience, know-how to connect people and they match you up quickly with companies who can use your wastes or whose wastes you can use. The business opportunity workshops are a fantastic way to match companies, and it is really worthwhile to attend a workshop."

Greg McDowell, Suzi products

Our Work (2016/17)

WISP has held three business opportunity workshops and identified 500 potential synergies between businesses, of which 39 have been completed.

- 2 640 tonnes diverted from landfill, valued at R6 million
- R7 million in cost savings to companies
- R0.5 million investments secured
- 8 000 tonnes equivalent carbon dioxide (CO₂e) saved, equivalent to the annual electricity use of 2 160 households



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The cumulative impact of the team's work over time is shown in the table below.

CO₂ savings here refer to households as a metric

| Key performance indicators | Years 1-3 (2013-2016) | Year 4 (2016 – 2017) | Estimated 5-year impact | |
|--|--|--------------------------------------|---------------------------------------|---------------|
| Waste diversion (tonnes) | 2 640 | 2 310 | 7 900 | |
| Additional revenue (Rand million) | 6.00 | 6.0 | 18.2 | |
| Cost savings (Rand million) | 7.00 | 4.0 | 15.4 | |
| Fossil GHG savings² | (tonnes CO ₂ e) | 7 900 | 17 200 | 46 700 |
| | Annual electricity use for SA households | 2 133 | 4 644 | 12 600 |
| Jobs Created | 11 Temporary 12 direct 31 other | 14 temporary 8 direct 32 other | 25 temporary 20 direct 85 other | |



Completed Synergies: Highlights

192 tonnes float glass diverted from landfill per year

Building glass off-cuts and breakages from National Glass, Skyward Windows and Swartland Glass were diverted from landfill for processing and recycling by Simple Active Tactics (SAT) in Atlantis. SAT, a manufacturer and processor of granular abrasives, uses waste glass to make abrasives and swimming pool filtration media.

- Fossil GHG CO₂e savings: 751 t CO₂e per year

- Additional sales: R312 000 per year

- Cost savings: R158 974 per year

- Private investment: R200 000

Small businesses save R67k per annum through egg whites

An artisan franchise makes ice cream, and in their process they separate the egg yolk from the egg white. The egg whites used to be sent to landfill, until WISP connected the ice-cream manufacturer with a bakery. The bakery now purchases the egg whites at a reduced cost for use in fudge and meringues.

- 212 litres per month of egg whites diverted from landfill

- 63.08 tonnes CO₂e GHG per year – 16 554 trees planted in a year

- Sublime savings: R45k per annum

- Artisan franchise savings (they charge R 8.80/l): R22k per annum.

3 400 sample socks saved, paired and donated

Impahla Clothing manufactures socks, and for each order it produces a sample sock. The individual socks used to be stockpiled until WISP identified five charities to whom to donate the socks. After a sock-pairing evening hosted at GreenCape, the pairs were donated to:

- Carpenter's Shop (social care to homeless people in the City Bowl): 150 pairs

- True North (early childhood development): 400 pairs

- Harrington Buyback Centre (recycling): 300 pairs

- The Haven Shelter (homeless shelter): 500 pairs

- United Church (donation to Polsmoor prison): 350 pairs.

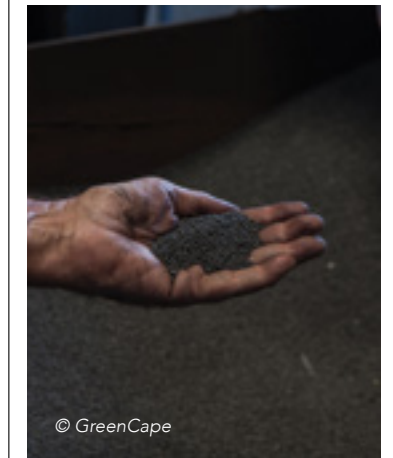
The total value of the donated socks amounts to R37 500.

Other Highlights

WISP and the South African Renewable Energy Business Incubator (SAREBI) have launched an enterprise development programme

Vetted business opportunities identified by WISP have been matched with entrepreneurs. Thirteen entrepreneurs are attending masterclasses at SAREBI to develop these opportunities into viable businesses. WISP and SAREBI expect three new businesses to be established by June 2017.

WISP has helped start Africa's largest waste-to-energy plant. WISP has assisted with the start-up of the New Horizons Energy biodigester by sourcing 2 515 tonnes of cow manure to start the biodigesting process.



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Our Funders and Partners

GreenCape is grateful to our partners for their technical, financial and other support during the 2016/17 financial year.



