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Positive proof of global warming
1800's
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The first Municipal Zero Waste to Landfill Pilot Project
Driving the transition to a Circular Economy
Phase 2 commenced with a follow-up waste characterisation of the pilot area to confirm the findings of Phase 1.
A site for composting was identified, with training and support provided
An existing local recycler was identified to accept the recyclables
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FROM WASTE TO A USEFUL PRODUCT: AN ELECTROLYTIC MANGANESE CASE STUDY
Walter Fourie, EnviroEng
Mishelle Govender, DFFE
Wihan Venter, Endecon
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World Biogas Association


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GREY HYDROGEN
BLUE HYDROGEN
TURQUOISE HYDROGEN
GREEN HYDROGEN
SMR or gasification
SMR or gasification with carbon capture (85-95%)
Pyrolysis
Electrolysis Double-stage AD?
Methane or coal
Methane or coal
Methane
Renewable electricity
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IN HONOUR OF THOSE WHO HAVE DEMONSTRATED CONSCIENTIOUSNESS BEYOND NORMAL ETHICAL BEHAVIOUR IN PURSUIT OF EXCELLENCE AND IWMSA GOALS
MPENDULO GININDZA
PRESIDENT
NICOLLE DE BRUYN
EXECUTIVE MANAGER
18 OCTOBER 2022
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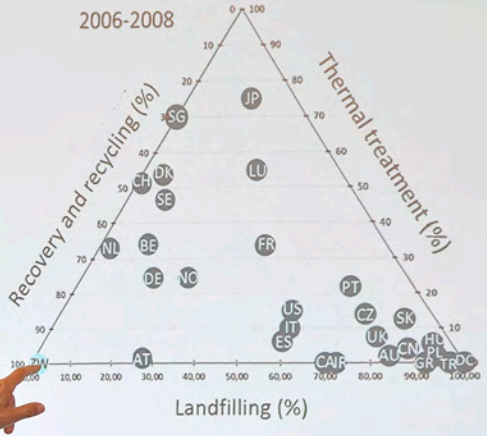

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Waste streams
Technology
By-products
PLASTICS
PAPER
GLASS
METAL
Recycled Paper
Recycled Glass
Recycled plastic product
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Waste streams
Technology
PLASTICS
PYROLYSIS
REMOULDING
INCINERATION
DISPOSAL TO LANDFILL
Oils, Fuels, Syngas, Char,
Recycled plastic product
Heat, Energy, Ash, CO_2, N_2O, NOx, NH_3, TOC, CH_4
CH_4
PAPER
PAPER MAKING
INCINERATION
DISPOSAL TO LANDFILL
Recycled Paper
Heat, Energy, Ash, CO_2, N_2O, NOx, NH_3, TOC, CH_4
CH_4
GLASS
PYROLYSIS
REMOULDING
DISPOSAL TO LANDFILL
Oils, Fuels, Syngas, Char, Carbonisation
Recycled Glass
CH_4
METAL
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By-products
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Recycled plastic product
Heat, Energy, Ash, CO_2, N_2O, NOx, NH_3, TOC, CH_4
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Recycled Paper
Heat, Energy, Ash, CO_2, N_2O, NOx, NH_3, TOC, CH_4
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Role of Biogas in the Just Energy Transition
Toward achieving the Paris Agreement
Continuous production of Green electricity to supplement the existing power generation capacity to cover peak demand
Agricultural application where the effective treatment of various effluents and by- products.
Energy carrier widely used in combined heat and power production, but also as a vehicle fuel.
Perfect example of a circular economy
Produced from a wide range of biomass sources and waste, while the digestate, is in turn a perfect organic fertilizer containing all the nutrients originally present in the feedstock.
Biogas can be created from municipal waste like garbage, sewage, and agricultural waste to not only produce energy but reduce the amount of material disposed to landfill.
Reducing transport sector emissions
Biogas can be further processed to produce biomethane, which is technically equivalent to natural gas, but it is considered carbon neutral.
Biomethane could therefore power CNG (Compressed Natural Gas) vehicles.
It has no mixing restrictions or special infrastructure requirements. Biomethane is the easiest biofuel to produce on a large scale.
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Role of Biogas in the Just Energy Transition
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Our purpose
Established 2013
Strategic focus: Building a sustainable industry
Outcome: Industry Growth
Deliver a roadmap for SA Biogas to get to 1.254 GW in 5 years and build toward 10 GW potential.
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to support and promote sustainable best practice in the waste and secondary resources sectors.
Our purpose
Strategic focus: Building a sustainable industry
Outcome: Industry Growth
Drive the promotion of biogas sector.
Deliver a roadmap for SA Biogas to get to 1.254 GW in 5 years and build toward 10 GW potential.
Ensure inclusion of biogas in SA national IRP plan.
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Existing landscape of projects at various stages of development
Landscape of Biogas Plants in South Africa – number of plants per province
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A new era for waste management
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Introduction
A new era for waste management
AD
Anaerobic digestion (AD) is a waste recycling technology that takes food waste and digests it under oxygen-free conditions.
worldbiogasassociation.org


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Waste and Climate Change
F1
GHG
ASSESS/MODEL
KEY THEME
• Localisation of GHG generation hotspots
• Reporting on climate change / standards
• Development of GHG indicators
F2
WROSE
MITIGATE
KEY THEME
• Technologies to achieve stabilisation
• Localisation of appropriate technologies
• Low-carbon economy
F3
CLIMATE
ADAPT
KEY THEME
• Low carbon economy / best scenario
• De-carbonization of South Africa
F4
AFRICAN CITY OF THE FUTURE
RESILIENT → SUSTAINABLE
KEY THEME
• Transitioning from resilient to smart, wise, and sustainable
• Indicators of sustainability
WasteCon


F4
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EXIT
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Institute of Waste Management of Southern Africa

Waste Biorefineries: Organic Waste As An Innovative Feedstock For The Production Of Bioplastic In South Africa

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

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WASTE AND CLIMATE CHANGE

Preshanthan Moodley, Cristina Trois
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Research and Innovation
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CSIR
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A WASTE RDI ROADMAP FOR SOUTH AFRICA
The importance of research, development and innovation (RDI)
in transforming the South African waste sector
WasteCRIB


Methods
All users invited to participate in the survey.
• Included: All waste management activities registered with the SAWIS
• Excluded: Hazardous waste generators exempted from reporting
• Excluded: Activities registered with the GWIS and IPWIS only.
The total number of registered SAWIS users in April 2021: 928
• The targeted number of responses was 272 (based on the total population size, a confidence level of 95%, and a confidence interval of 5).


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To support and promote sustainable best practice in the waste and secondary resources sectors.
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Mike Nicholls
Interwaste (Pty) Ltd
DELEGATE


Aim of the project
Aim of the project:
Strengthening Waste Management Legislation for a Greener Recovery" to provide technical assistance and capacity building to the government of South Africa
Objective 1:
Revision of the IWMP guideline by
1. Mainstreaming the principles of the NWMS
2. Incorporating waste picker integration and
3. Circular economy
Objective 2:
Revision of the Model by-law
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Mainstreaming of principles of National Waste Management Strategy 2020
• The IWMP guideline does not cover waste minimization and prevention and environmentally sound socio-economic growth and development
• Inclusion of waste minimization and prevention and environmentally sound socio-economic growth and development is therefore recommended
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How does THP work
From sludge hopper
16.5% DS
Recycled Steam : 100°C
Process gas
to Digester
Steam explosion
Pulper
vessel
~90°C
Flash Tank
~105°C
Hydrolyzed
sludge to cooler
14.5% DS
Steam from
Boiler
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Catch on to the circular economy and let's work towards zero waste


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EXIT
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