Alberto Borello - General Secretary
Southern Africa Biogas Industry Association

SABIA
SOUTHERN AFRICAN
BIOGAS INDUSTRY ASSOCIATION

www.sabia.org.za

About us

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SOUTHERN AFRICAN BIOGAS INDUSTRY ASSOCIATION

"A single voice to drive the development of a sustainable commercial biogas sector by promoting the multiple benefits of biogas within our region."

About us

SABIA leads industry discussions with relevant governmental institutions, international organisations, NGO's and other industry associations to promote the sector, lobby for relevant legislative change, policy development and assisting members in gaining exposure.

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Achievements

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- Developing a biogas incentive scheme

- Developing biogas standards for micro e industrial scale plants

- Implementing laws for the reuse of organic waste

- Developing of the Environmental Norms and Standards for biogas projects

- Exclusion of biogas plant from the air emission license

- Representing a community of 1 500 stakeholders in the country

Context - Energy IRP 2019

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	Coal	Coal (Decommissioning)	Nuclear	Hydro	Storage	PV	Wind	CSP	Gas & Diesel	Other (Distributed Generation, CoGen, Biomass, Landfill)
Current Base	37 149		1 860	2 100	2 912	1 474	1 980	300	3 830	499
2019	2 155	-2373					244	300		Allocation to the extent of the short term capacity and energy gap.
2020	1 433	-557				114	300			
2021	1 433	-1403				300	818			
2022	711	-844			513	400 1000	1600			
2023	750	-555				1000	1600			500
2024			1860				1600		1000	500
2025						1000	1600			500
2026		-1219					1600			500
2027	750	-847					1 600		2000	500
2028		-475				1000	1 600			500
2029		-1694			1575	1000	1 600			500
2030		-1050		2 500		1 000	1 600			500
TOTAL INSTALLED CAPACITY by 2030 (MW)	33364		1860	4600	5000	8288	17742	600	6380	
% Total Installed Capacity (% of MW)	43		2.36	5.84	6.35	10.52	22.53	0.76	8.1	
% Annual Energy Contribution (% of MWh)	58.8		4.5	8.4	1.2*	6.3	17.8	0.6	1.3	

Installed Capacity
Committed / Already Contracted Capacity
Capacity Decommissioned
New Additional Capacity
Extension of Koeberg Plant Design Life
Includes Distributed Generation Capacity for own use

Context Energy – RFI

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In December 2019 the Department of Mineral Resources and Energy released a request for information for submissions for emergency power generation procurement for 3 000 MW as an endeavour to restore grid stability.

Context - GHE emission Paris Agreement

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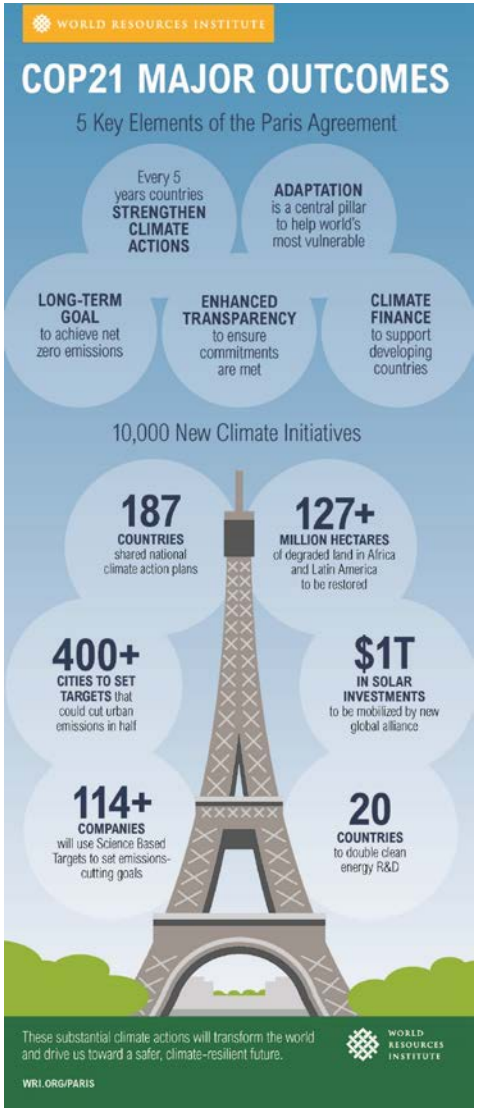
In 2016 South Africa ratified the Paris Agreement.

In 2017 South Africa accounts of 1.13% of global GHG emissions (ranked 16th worldwide) with 510 Million ton of CO_2eq.



Context – Climate Action Tracker

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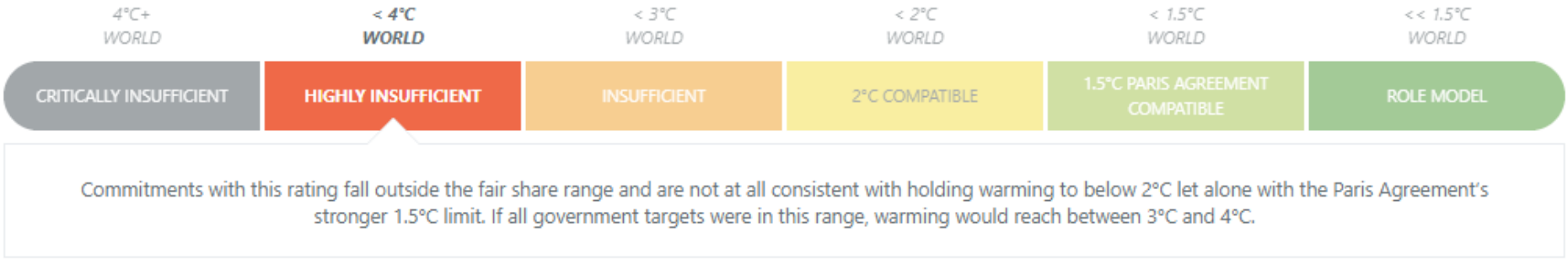
Climate Action Tracker



South Africa's (Nationally Determined Contributions) NDC target as **"Highly Insufficient"** based on the upper end of the NDC range. In this context, South Africa should consider revising its target downward for 2030 to be resubmitted to the UNFCCC as part of the Paris Agreement's ambition raising cycle of 2020.

Context – Climate Action Tracker

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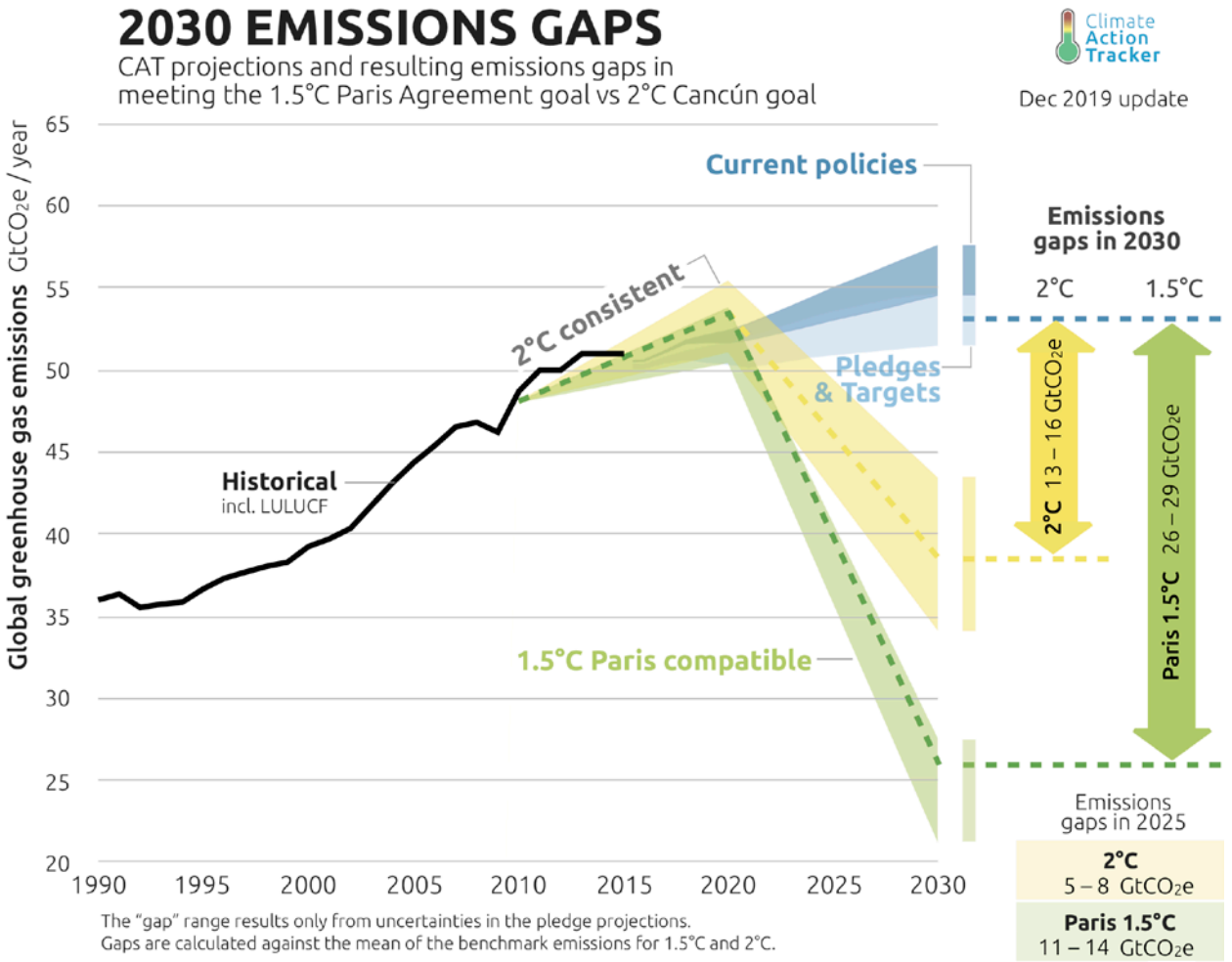

Context – Energy Gap

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Biogas by the Numbers

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	Theorical	Feasible
Biogas potential for power generation [MW]	10,297	1,254
Average project installed size [MW]	0.5	0.5
Direct permanent job creation	247,122	30,177
Development/Construction jobs in the sector	1,153,234	141,455
Actual plant built 30 MW	-	2.4%

Biogas by the Numbers

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	Theorical	Feasible
Energy delivered to or displaced from the national grid [MWh/y]	85,462,913	10,410,158
Equivalent Wind installed capacity [MW]	35,610	4,338
Equivalent PV installed capacity [MW]	58,536	7,130
Installed peaking capacity in SA 2019 [MW]	3 570	
CO_2e avoided [t/y]	81,189,768	9,889,650
% on total country emission in 2019	15%	2%

german cooperation DEUTSCHE ZUSAMMENARBEIT
Implemented by: giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
ALTGEN
CSIR our future through science
the dti Department: Trade and Industry REPUBLIC OF SOUTH AFRICA
ECN

Biogas by the Numbers

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52Bn ZAR< Biogas< 250Bn ZAR

SA Biogas Industry Direct Local & Foreign Investment Value

Options and opportunities

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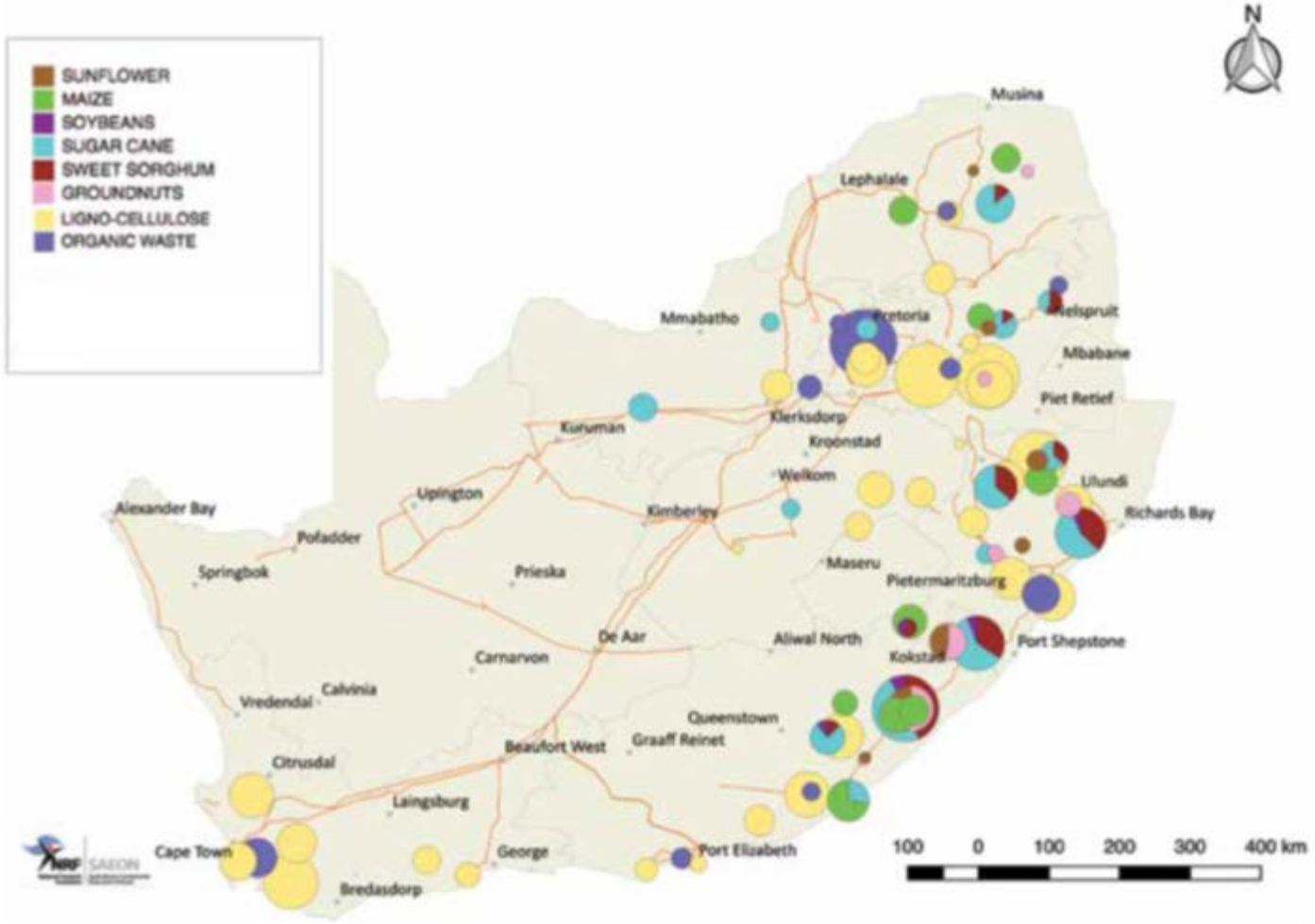

Existing plants in SA

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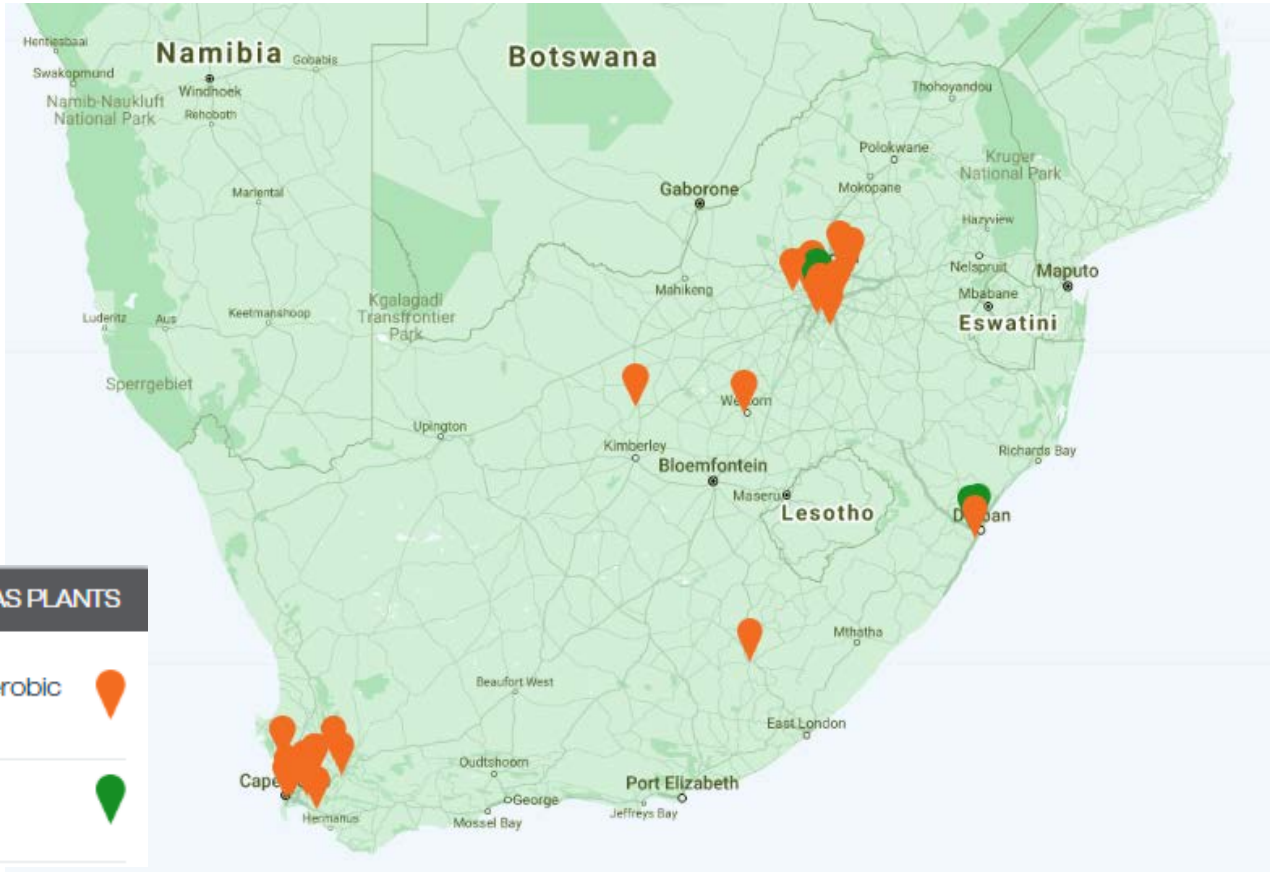

CATEGORIES OF BIOGAS PLANTS

- Industrial Scale Anaerobic Digestion
- Landfill Gas Power Generation Plant

Case studies

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	300kW co-digestion		200kW piggery	Municipal solid waste (Bio CH4 and CO2)	
FEEDSTOCK			10,000 pigs		
MSW (Rand/t)				300	450 t/day
Condemned (Rand/t)	850	16 t/day not fit for consumption			
External (Rand/t)		4t/day food waste		300	50t/day
TARIFS					
Electricity Rand/kWe	1.2		1.2		
Heat Rand/KWt	0.25		0.25		
REVENUES					
Electricity (Rand/y)	1,440,000		960,000		
Thermanl (Rand/y)	135,000		90,000		
Condemned- saving (Rand/y)	3,400,000				
Gate fee (Rand/y)				48,600,000	
Recyclable/compost (Rand/y)				13,140,000	
CH4 (Rand/y)				27,005,080	
CO2 (Rand/y)				56,677,000	
OPEX (Rand/y)				(58,000,000)	
TOTAL (Rand/y)	4,975,000		1,050,000	87,422,080	
CAPEX (Rand)	18,500,000		8,500,000	390,000,000	
Simple Payback (y)	**3.7**		**8**	**4.5**	

SA biogas strategic path

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SABIA has adopted a global strategy for the development of a local biogas industry and we are working with our government to:

1. Include the production of biogas as a climate change mitigator in national, regional and cities' energy plans
2. Include targets for the recycling of biodegradable wastes and feedstocks for the production of biogas in Nationally Determined Contributions to the UNFCCC by 2020
3. Build a Circular Economy in which organic wastes and feedstocks are recycled into renewable gas
4. Contribute to the reduction of food waste production and to treat and recycle unavoidable food waste into biogas
5. Adapt the flow of financial support to technologies, including biogas, which enable achievement of a low-carbon economy based on the quickest and most cost-efficient CO_2 reduction pathways
6. Use the fuel produced by biogas production facilities for publicly owned transport and waste collection trucks. Carbon neutral fuel for transport, contribute to air quality in cities worldwide using biogas as a clean transport fuel.

SABIA Looking forward

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- Setting of targets for the recycling of biodegradable wastes and feedstocks

- Introduction of separate organic waste collection for treatment in biogas facilities

- Development, support and creation of the SABIA PES tariff (Payment for Ecosystem Services or Payments for Environmental Services) to stimulate the recovery of organic residues

- Production of biogas through the installation of biogas technologies at
    a. agri-industry processing facilities,
    b. urban wastewater treatment plants
    c. livestocks farms

SABIA Looking forward

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- Adoption of the Organic Waste Norms and Standards from 2016

- Enforcement of the capture and utilization of landfill gas at both private and municipal landfills

- Enforcement all municipalities and Eskom to buy-back surplus energy at Mega-flex rates

- Incentivize the energy generation and use from livestock manure via targeted policies such as specific rural schemes for micro-scale digestion that result in energy security and independence, reduced use of solid fuels for domestic cooking and heating, and reduced deforestation

- Development of standards and certifications for safe trading and use of digestate

SOME OF OUR SUPPORTERS

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Get Involved!
Be Part of the Solution!

write to

secretary@sabia.org.za