water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

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NATIONAL COUNCIL OF PROVINCES

FOR WRITTEN REPLY

QUESTION NO 778

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778. Mr S F Du Toit (North West: FF Plus) to ask the Minister of Water and Sanitation:

With reference to his reply to written Question 532 on 17 September 2021 and oral Question 209 on 22 November 2021, what progress has been made on the Faecal Sludge Management Strategy in response to Sustainable Development Goal Target 6.2, specifically regarding (a) the biogas generation, (b) waste to energy plant at the Cape Flats Wastewater Treatment Works and (c) any other plants in this regard?

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MINISTER OF WATER AND SANITATION

The National Faecal Sludge Management Strategy was approved by Cabinet and has been disseminated to various stakeholders to facilitate collaborative implementation. The Strategy in line with the National Sanitation Policy (2016) supports the resource recovery, recycling and reuse of wastewater sludge and faecal sludge to produce various by-products most of which are at small to medium scale. The production of these by-products is at various stages of research.

(a) Biogas in South Africa dates to 1957 in its first installation using pig manure but experienced limited biogas market development due to limited grants and lack of appropriate public sector initiatives at the time to support and drive biogas technologies.

(b) The waste to energy plant at the Cape Flats Wastewater Treatment Works (WWTW) provided evidence in the National Faecal Sludge Management Strategy that there are operational costs that can be saved specifically on fuel required to operate the WWTW. The methane gas (biogas) produced in anaerobic digesters in WWTW is used to fuel a combustion chamber that

(biogas) produced in anaerobic digesters in WWTW is used to fuel a combustion chamber that generates heat for drying the sludge to be reused as soil conditioner. The sludge dewatering and drying plant in Cape Flats Wastewater Treatment Works demonstrated how new sludge treatment technologies can benefit the environment and save money for transporting and disposal cost of wastewater sludge to hazardous landfill sites

In the development of National Faecal Sludge Management Strategy, the Department of Fisheries, Forestry and the Environmental (DFFE) supported the Strategy position for sludge beneficiation in biogas. In support of the biogas initiatives the sector led by Department of Forestry Fisheries and the Environment has developed the Biogas Guidebook for Small to Medium Scale Industrial Biogas Plan in South Africa as well as the Best Practise Manual for Developing Industrial Scale Biogas Projects in South Africa. The DFFE shared information on 3 biogas projects that are at a planning stage involving Wastewater Treatment Works (WWTW) as follows:

BIOGAS PROJECT	STATUS OF THE PROJECT
Tshwane Economic Development Agency (TEDA) Daspoort WWTW Biomethane Project (Gauteng)	TEDA intends to co-digest waste from Tshwane Fresh Produce Market (TFPM) with sewage sludge from Daspoort WWTW. Biogas upgrade to biomethane for Bus Rapid Transit (BRT) fuel. The Feasibility Study was done by CSIR. The estimated total cost of full-scale investment is USD500m. The project is expecting USD200 000 grant from United Nations Industrial Development Organisation.
Dr JS Moroka Municipality WWTP/Biogas Investment (Mpumalanga)	Construction of biogas plant for municipality and community of Dr JS Moroka; to use WWTW sludge and animal waste/excess grass as feedstock; energy to be used by the WWTW and community. The project is ready for investment. The project is expecting grant support from UNIDO of USD200,000.
Nelson Mandela Bay Fishwater Flats Biogas Digester (Eastern Cape)	The project is led by Nelson Mandela Bay Metro. The project is planning to construct a biogas plant on-site. Some measuring/monitoring equipment was installed by the Pilot Project. Feasibility study was conducted, and Business Plan developed. A Public Private Partnership (PPP) model is being considered to implement the project.

(c) Other initiatives that are under implementation or operational in the public and private sectors include the following:

- The Drakenstein Municipality in the Western Cape secured funding of R1,3 billion In 2023 from National Treasury Budget Facility Infrastructure (BFI) to upgrade and refurbish the Paarl WWTW and for the installation of a biogas facility. This initiative was supported by the DWS and would enable the municipality to promote biogas energy generation at the WWTW.

- A R400 million biogas plant was opened in Athlone, Cape Town, in January 2017. As the highest cost biogas project in South Africa, the plant aimed to digest 500 tonnes of organic household, municipal and industrial waste per day from across Cape Town and produce bio-methane.

- The Beefcor Bronkhorstspruit Feedlot biogas project is operated by Bio2Watt. The project cost R150 million and started operations in April 2015. The plant utilises 120 000 tonnes of feedstock a year, the bulk being manure, with additional supplements from the abattoir along with food wastes. The Bronkhorstspruit plant has a generating capacity of 4.6 MW, although it was originally designed for 8MW. The plant supplies electricity via wheeling agreements with Eskom and the City of Tshwane to the BMW Rosslyn Plant, roughly 60 km from the site. The biogas plant supplies roughly 25–30% of BMW's electricity demand.

- The Zandam Farm biogas plant situated 18 km east of Durbanville in the Western Cape, is a R9.2 million agricultural biogas project. The feedstock is from 6 650 pigs that produce around 22 tonnes of manure per day, which is fed into the digester. This plant demonstrates the potential for small-scale commercial biogas in an agricultural setting where the entire output is consumed on-site. The plant produces biogas combusted in on-site CHPs to supplement the farm's electricity demand. The estimated output is 41m³/h of biogas.

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DRAFT REPLY: RECOMMENDED/ NOT ~~RECOMMENDED/~~ AMENDED

DR SEAN PHILLIPS
DIRECTOR-GENERAL
DATE: 7/12/23

DRAFT REPLY: APPROVED/ ~~NOT APPROVED/ AMENDED~~

MR SENZO MCHUNU, MP
MINISTER OF WATER AND SANITATION
DATE: 12/12/23