



## TERMS OF REFERENCE FOR MARKET RESEARCH STUDY

<b>KEY STRATEGIC AREA:</b>	9 (Business Development and Innovation)
<b>THRUST</b>	3 (Business Development)
<b>PROGRAMME</b>	13 (SASTEP)
<b>TITLE</b>	Market Research Study: Determining the opportunity and feasibility of innovative sanitation market (sanitation economy) in South Africa.

### Background

The South African Department of Science and Technology (DST) entered into a partnership agreement with the Bill and Melinda Gates Foundation (BMGF) and The South African Water Research Commission (WRC) to pilot, demonstrate and commercialise innovative sanitation technologies, including the “Reinvent the toilet” technologies developed through the BMGF, within the framework of South African Sanitation Technology Demonstration Programme (SASTEP). The WRC provides programme implementation and support services, whilst the DST and the BMGF provide investment to support the implementation of the programme. SASTEP requires a multi- stakeholder approach that involves research councils, universities, municipalities, government departments, funders and commercial partners to ensure that the sanitation innovation value chain is developed in support of the roll out of next generation sanitation technologies. The programme activities are aligned to the Industrial Policy Action Plan (IPAP) to address commercialisation, localisation and manufacturing by bringing on board commercial partners capable to provide industrial support base for the local and regional markets and disrupt where appropriate the current paradigm of water conveyance based infrastructure leading to a more water secure future.

SASTEP execution strategy is an innovative and a new approach within the WRC to bridging the gap between research, development and innovation (RDI) and commercialisation. The execution strategy is divided into three work packages; (1) technology demonstration, (2) market development and commercialisation, and (3) industrialisation and localisation. Market development and commercialization work package aims to define and quantify the market for the next generation

sanitation technologies and develop commercialization strategies that will achieve at least 1% market share and service at least 1% of the public and private sector sanitation services demand by 2022.

## **Rationale**

Sanitation Market in South Africa is largely driven by the government as a provider of sanitation services to the citizens of the country. Adequate sanitation facilities are a necessary part of achieving the rights to dignity and to an environment that is not harmful to health, as indicated in the Bill of Rights of the Constitution. Generally, preferred sanitation facilities in South Africa are waterborne sanitation systems whereby a flush toilet is connected to a centralized sewerage system. South Africa has made significant progress in providing its citizens with adequate sanitation. However, 23% of South African households still do not have access to an acceptable and adequate sanitation services. According to Stats SA 2017, 56 million people live in South Africa with 64% of the population considered urban. 4.1 million households were estimated to lack access to improved sanitation with 1.6 million of those households in rural municipalities. The backlogs in rural municipalities is estimated at 50% of the households in those municipalities. The National Development Plan 2030 has estimated that a further 7.8 million people will be living in South African cities in 2030 and these will increase pressure on municipalities to deliver services. It is estimated that 40% of water consumed by households in the country is used only to flush toilets; in each flush about 6L to 9L of pure water is used. In addition to the backlog in service delivery, existing infrastructure is increasingly at risk of failure. The challenge of infrastructure is mostly evident in communities highly dependent on waterborne sewage systems where maintenance, refurbishment and upgrading of collection and treatment infrastructure have been neglected over the years.

Given these challenges, there is a need to think beyond sewers as a solution to providing universal access to sanitation. Therefore, SASTEP aims to introduce off-grid innovative sanitation technologies into the market and there is a need to understand the opportunities and the feasibility of these technologies within the sanitation value chain with emphasis on the toilet economy, circular sanitation economy and smart sanitation economy. The toilet economy refers to the toilet product and the service innovation that provides toilets fit for purpose for all contexts and incomes. The circular sanitation economy refers to the economic system aimed at minimizing waste by converting toilet resources into value-adding products. Smart sanitation economy refers to the digitisation of sanitation whereby new business opportunities are created around the use of new smart, digital and internet of things technologies to drive efficiencies in sanitation business models. Therefore, the new sanitation economy entails new toilet product designs applying circular sanitation economy principles to minimise waste, create value-adding products and capture data to feed the smart sanitation economy,

which will optimise the data for operating efficiencies, maintenance, plus consumer use and health information insights.

### **Purpose of the study**

The purpose of the market research study is to develop insights into the market opportunities for the new off-grid sanitation technologies and the resultant circular sanitation economy and smart sanitation opportunities. The study will also investigate mainstreaming gender in water and sanitation in South African in order to unpack the impact of sanitation economies on women. The aim is to identify and quantify the role of women in the sanitation economy. The market research study will cover the following items:

- A proposed market research methodology (using national and regional level data covering both rural and urban settings) to assess and determine the size and potential of sanitation market including technologies and services.
- Market segmentation (e.g. residential, public and commercial) for toilet economy, circular sanitation economy and smart sanitation economy– identification and quantification of different opportunities for innovative sanitation technologies in the toilet economy, circular sanitation economy and smart sanitation economy.
- Market dynamics for toilet economy, circular sanitation economy and smart sanitation economy - identification and analysis of market variables in the form of drivers, restraints and future opportunities.
- Business environment analysis (toilet economy, circular sanitation economy and smart sanitation economy) – conduct an industry analysis using tools such as PESTEL to understand the structure, growth rate and the state of the evolution of the industry, and to identify current competitors (manufacturers, retailers and distributors) in the industry and the rivalry among them.
- Competitive landscape analysis (toilet economy e.g. flush toilets and Ventilated Improved pit latrines, circular sanitation economy and smart sanitation economy) using Porter’s 5 forces – identification of direct and indirect competitors, understanding of the competitor strengths and weaknesses, and identifying the barriers to entry.
- Outline key developments required to improve market structure and investment of the three economies (market penetration, affordability, regulatory environment, etc.)
- Mapping of the entire sanitation value chain to identify opportunities and challenges.

- Evaluation of the sanitation services (e.g. operations & maintenance, transportation, waste treatment) market to understand the requirements to shift from public driven model to industry driven model whereby sanitation services are not municipally managed but municipally enabled.

### **Requirements**

The consultant who will conduct the market research study is required to submit the following documentation to be considered for the study:

- Proposal demonstrating understanding and knowledge of market research studies. The proposal should include detailed research methodology to assess and determine the size and potential of the sanitation market including technologies and services, work plan, timelines, available resources, deliverable and budget;
- Proof of experience with a list of similar assignments and/or clients, ideally both in the private and public sector. The service provider should provide a detailed CV, and a CV of any other team members that will be involved.
- Declaration of any conflict of interest.
- A full report to WRC on completion of this project.

### **Deliverables Guidelines**

The expected deliverables for this study include the following:

- Interim report indicating the progress of the study specifically on early market analysis of the toilet economy mid-implementation period.
- Access to raw data and models used in the market research assessment.
- A final consolidated research report of results covering all the objectives detailed in the section above.

### **Time frame**

The expected timeline to complete the study is 16 weeks from the day of contract signature between WRC and the successful service provider post the procurement process. Any change in timeline shall be agreed upon by both parties.

The proposal to conduct the study must be submitted by **30 August 2019**.