

UNDP-WRC

ENTREPRENEURSHIP TRAINING GUIDE



accelerator
labs

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Isle Utilities, Bosch Capital & Bosch Projects

OVERVIEW OF THE SOUTH AFRICAN MARKET

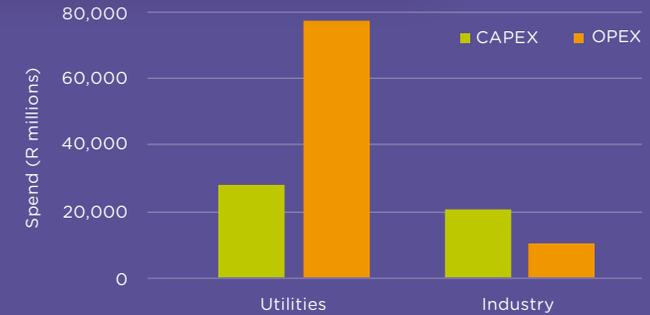
The market for water innovations in South Africa is estimated at R125,411 million for 2021. This includes spending forecasts for water and wastewater utilities as well as industrial businesses. Within each of these market segments the spending can be broken down into Operational Expenditure (OPEX) or Capital Expenditure (CAPEX)

Operational expenditure includes rent, equipment, inventory costs, marketing, payroll, insurance and R&D activities including technology trials.

Capital expenditure includes funds to acquire, upgrade and maintain physical assets such as property, plants, building, technology or equipment. These funds are often used to undertake new projects or investments and as such, most innovation purchases by end users are included in this segment.

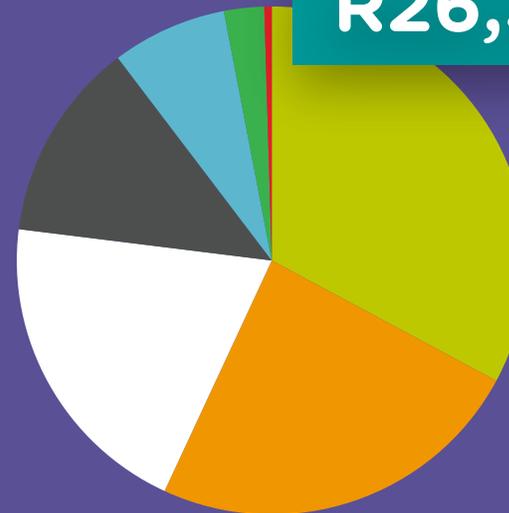
Total market for water innovations in 2021

R125,411 million



CAPEX spending by water and sanitation service utilities

R26,349 million



DESIGNING A SUCCESSFUL TRIAL

Trials are an essential part of demonstrating an innovations performance and can be conducted either in a controlled laboratory environment or in an operational setting depending on the readiness level of the technology.

It is important that innovators take the time to lay solid foundations for their trials success by planning it sufficiently.



STEP 1

SOUNDNESS OF TECHNOLOGY

- Based on trustworthy engineering principles

STEP 2

MATERIALS

- Consider current market, local availability and cost

STEP 3

OPERATIONS & MAINTENANCE

- Assess the technology through the lens of the current markets O&M mindsets/constraints
- Consider replacement costs & HAZOP

STEP 4

COMPETITIVE TECHNOLOGIES

- Consider current technologies that End Users may be using / benchmark and use as a comparison.

STEP 5

LEGISLATION: BY-LAWS, STANDARDS, ENVIRONMENTAL ACTS, GUIDELINES

- Do you have an understanding of the current regulations and how they impact your technology and business?

STEP 6

DATA (PERFORMANCE ACCEPTANCE CRITERIA)

- Data is the foundation to the technology assessment.
- Data capture over a reasonable period (see SASTEP guideline) to confirm consistent performance of the system
- Credible and sufficient data (e.g. SANAS accredited laboratory).
- Comparison to competitor/similar technology data.
- The data should confirm the Unique Selling Proposition of the innovation
- Presentation of data to be well defined and clearly related to legislation and innovator claims.

STEP 7

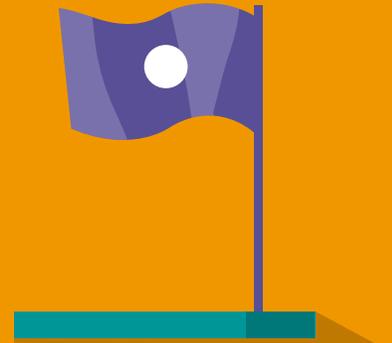
DEMONSTRATION

- Is the selected location pertinent to the intended market?
- Adequate scale relative to intended market.
- Indicate clear tracking of the SASTEP Guide to Field Testing and Demonstration.
- Demonstrate "User-Acceptance"/engagement with end-users

TRANSITIONING TOWARDS A SUCCESSFUL BUSINESS

The bulk of innovation development process focusses on the technical viability. However, as the innovation transitions towards commercialisation the focus of the innovator needs to shift to the financial and commercial viability and sustainability of the business. If you are a career scientist or engineer and do not want to become a businessperson, then forming the correct partnerships will be essential.

Technical viability is assessed using the **Technology Readiness Levels (TRL)** which span from 1 to 9. Whereas commercial viability and sustainability is assessed using **Business Readiness Levels (BRL)** which also span from 1 to 9.



MAKING A BUSINESS PLAN

The development of credible Business Plans is a crucial element for successfully accessing funding for commercialisation. The Business Plan must be underpinned by realistic assumptions and costing information to provide the Funder/investor with comfort that the business can achieve the outcomes specified in the Business Plan.

The Business Plan should also clearly communicate the value proposition to the target market. This could be achieved by providing an analysis of competitors and the quantification of the proposed benefit to the End User and potential savings.



Independence from grant funding

The bulk of the funding for innovations at the early stages in South Africa is provided mainly by government via grants through various agencies, including TIA, WRC, DST, and to a lower extent, by DFIs through concessional loans.

Commercial banks and private capital (venture capital and private equity) on the other hand tend to shy away from participating in early stage funding of innovations and commercial ventures in general, due to the perceived risks at the early stages on innovation/product development

Bankability and equity investment

Bankability is the ability of an innovation to attract the required investment from a funder/investor, manage risks and create opportunities. Debt funders typically review the ability of the business to service the required debt funding. This includes a review of the financial capacity and reputation of the shareholders in the business, as well as the credibility (capacity and experience) of the management team to deliver the intended objectives of the business.

Funders/investors will also review the capability and willingness of the End User to pay for the good or services that are provided. End Users that are larger established institutions provide further comfort that they can pay for the goods and services received as compared to smaller institutions or indigent households.

Value proposition

Answering the market analysis questions in the previous section will enable you to describe your unique selling point (USP) and the value to the end user that your innovation provides.

Your value proposition is a short document in which you explain clearly what your innovation does, what the costs and benefits of using it are, and what distinguishes it from the competing technologies. Your value proposition should not explain how your technology works, except for a single sentence naming the working principle. It is not a technical document but a commercial / financial one.

Manufacturing and market entry pathways

Transitioning towards a model that can deliver the identified goods or services can prove challenging to Innovators. Especially if the goods are fairly novel and repeatable manufacturing processes have not been created to deliver the good at the required quality and price point to the customer. In this case the Innovator may benefit from partnering with existing industry players that have the required skill set to develop the process to manufacture the good or the capability to manufacture the product on the Innovators behalf. Where the innovation is disruptive, new industrialisation pathways may need to be engaged on with government entities e.g. Department of Trade, Industry and Competition (DTIC).

