SUSTAINABILITY POLICY

Prepared By:

Designation:

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Date:

Submitted By:

Designation:

Date:

Approval By:

Designation:

Signature:

Date:

Effective Date:

Version:

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1. Objective

The objective of this policy is:

1.1. To ensure the proper and efficient use of natural resources to complement Overberg Water's objectives of a more environmentally sustainable and resilient bulk water provider in the region.

1.2. To adhere to the Constitution of the Republic of South Africa (1996).

1.3. To adhere to all water related legislation, particularly the National Water Act (Act 36 of 1998) and the National Water Resource strategy II.

1.4. To benchmark the sustainable water and energy goals in alignment to the relevant Government legislative frameworks and guidelines.

1.5. The policy will be reviewed annually.

1.6. The policy will be implemented in a phased manner, dependent on strategic goals and investment into sustainable resources.

2. Background

2.1. The Sustainability Policy of Overberg Water Board describes the procedures for the:

2.1.1. consistent and continually supply of safe, bulk potable water of the highest quality in an environmentally friendly approach;

2.1.2. increased use of sustainably sourced water, energy and other resources to allow Overberg Water to continue supply of water services that adheres to the South African National Water Act and other water and energy related legislation without compromising its contractual agreement with its customers;

2.1.3. proper management, monitoring and implementation of initiatives geared towards improving the sustainability footprint of Overberg Water in line with its strategic goals and objectives.

2.2. The Western Cape has opted to expand industrial development and agricultural production to create developmental and economic goals. However, the region faces two critical resource constraints in the coming decades, namely water and energy. Both sectors will compete for scarce water resources. For rural communities such as the ones within the Overberg region, the greater frequencies and severity of droughts and floods caused by climate change leads not only to crop failure but also interferes with water supply technologies. Thus, the need to be diverse in coming up with solutions to combat this trend.

2.3. Sustainable business practices has a dimension of fair and equal allocation of natural resources and value and an equitable share of resources and responsibility towards environmental protection should be universally applied. Sustainable development must be cognisant of the absolute dependence of both the economic and social dimensions on functioning ecosystems that can supply ecosystem services such as water, air, natural resources, disaster risk mitigation and so forth. For this reason, sustainability can be best viewed as a nested model, as illustrated in Figure 1

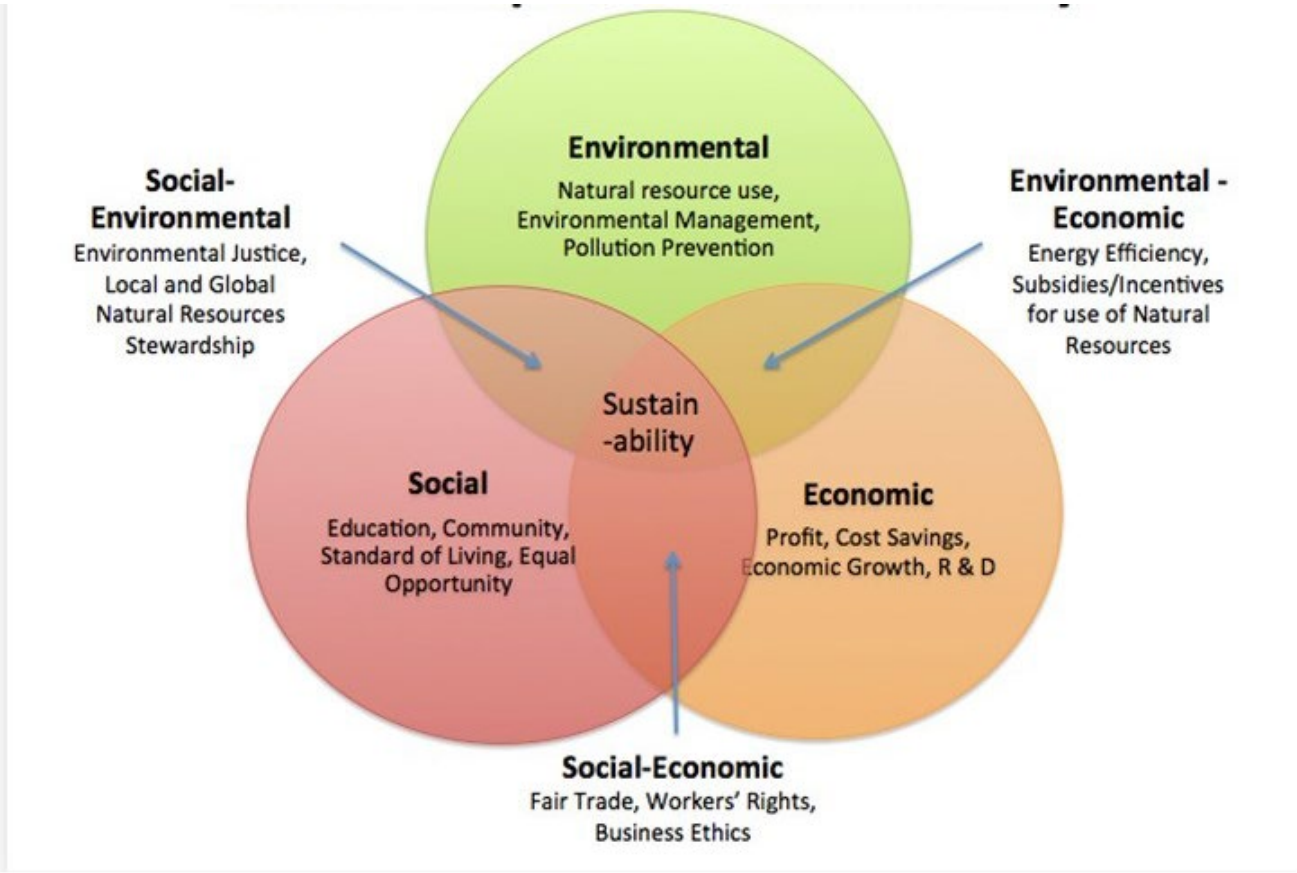


Figure 1: The three speres of Sustainability

3. Abbreviations

Term	Description
DWSHS	Department of Water & Sanitation, Human Settlements
KPI	Key Performance Indicator
WSP	Water Safety Plan
NWRS	National Water Resource strategy
NEMA	National Environmental Management Act

4. Definitions

Term	Description
Benchmarking	The process of comparing the performance of with other water boards, as well as leading practice in order to identify performance gaps.
Operation	The process of utilising an asset which will consume resources such as manpower, energy, chemicals and materials.

5. Statutory and Regulatory Framework

Figure 2 below provides a conceptual layout of the layered tiers of the environment in which the water board operates within.

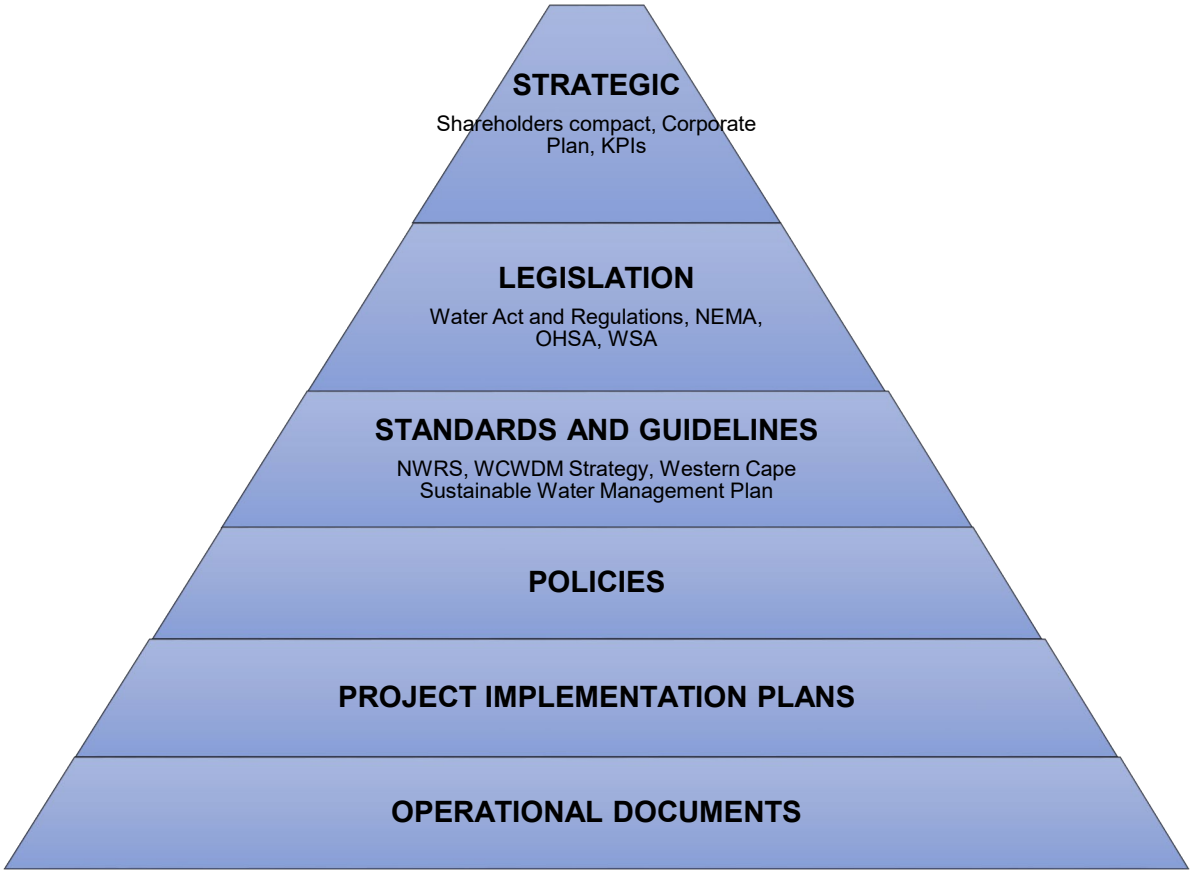


Figure 2: The statutory and regulatory framework diagram

The tiers are discussed below and covers the details required per tier:

5.1. STRATEGIC:

- **Shareholder's Compact:** In terms of Regulation 29 of the Treasury Regulations issued in terms of the Public Finance Management Act No. 1 of 1999, as amended by Act 29 of 1999 ("PFMA"), the accounting authority for a public entity listed in Schedule 2, must, in consultation with its executive authority, annually conclude a Shareholder Compact.

The Shareholder Compact documents the mandated key performance measures and indicators to be attained by the public entity as agreed between the accounting authority and the executive authority.

- **Corporate Plan:** In terms of Part 9, Chapter 29 in the Treasury Regulations issued in terms of the Public Finance Management Act No. 1 of 1999, as amended by Act 29 of 1999 ("PFMA"), the accounting authority for a public entity listed in Schedule 2, must, in consultation with its executive authority, annually conclude a Corporate plan [Section 52 of the PFMA].

The corporate plan must cover a period of three years and must include:

- strategic objectives and outcomes identified and agreed on by the executive authority in the shareholder's compact;
- strategic and business initiatives as embodied in business function strategies;
- key performance measures and indicators for assessing the entity's performance in delivering the desired outcomes and objectives;
- a risk management plan;
- a fraud prevention plan; and
- a financial plan addressing –

projections of revenue, expenditure and borrowings;

- asset and liability management;
- cash flow projections;
- capital expenditure programmes; and
- dividend policies.

5.2. LEGISLATION:

Water Management and Regulation:

- National Water Act and Regulations
- Water Services Act
- National Environmental Management Act

Financial Management:

- Preferential Procurement Policy Framework Act
- National Treasury and Dept. Trade and Industry regulations
- Public Finance Management Act
- CIDB Act
- Occupational Health and Safety Act

5.3. STANDARDS AND GUIDELINES

National Groundwater Strategy

National Water Resource Strategy

Water Conservation and Demand Management Strategy

National water security framework for South Africa

Renewable Energy Policy of South Africa

Western Cape Sustainable Water Management Plan

5.4. POLICIES

- Policy Development Framework Policy
- Operations, Maintenance and Infrastructure Policy
- Asset Management Policy
- SCM and other Financial Management Policies
- Human Resources Policy
- Housing Policy
- Personal Protective Equipment Policy
- ICT Policy

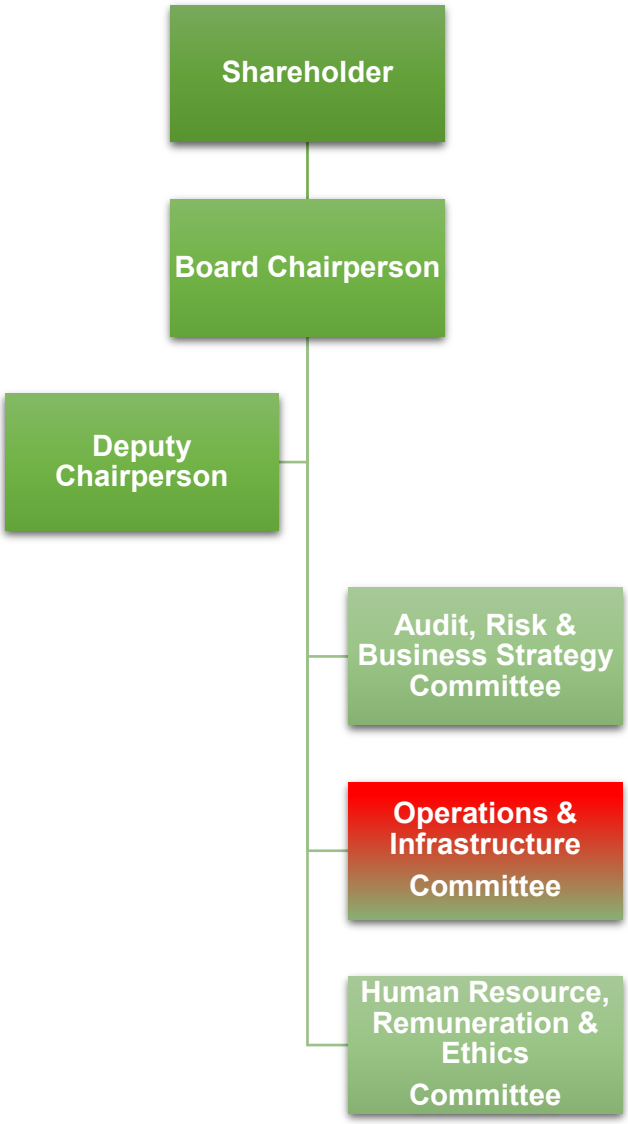
- **PROJECT IMPLEMENTATION PLANS**
- Feasibility and prefeasibility studies on Sustainable/renewable projects.
- Operational Risk Register

5.5. OPERATIONAL DOCUMENTS

- Operational Budget
- Demand Plan
- Operational Software framework
- Infrastructure Master Plan (Distribution network replacement programme)
- Provision of Services:
    - Customer Services Charter
    - Condition for the Provision of Services
    - Service Level Agreements

6. Governance Structure

6.1. Governance Structure



6.1.1. Committee Charter

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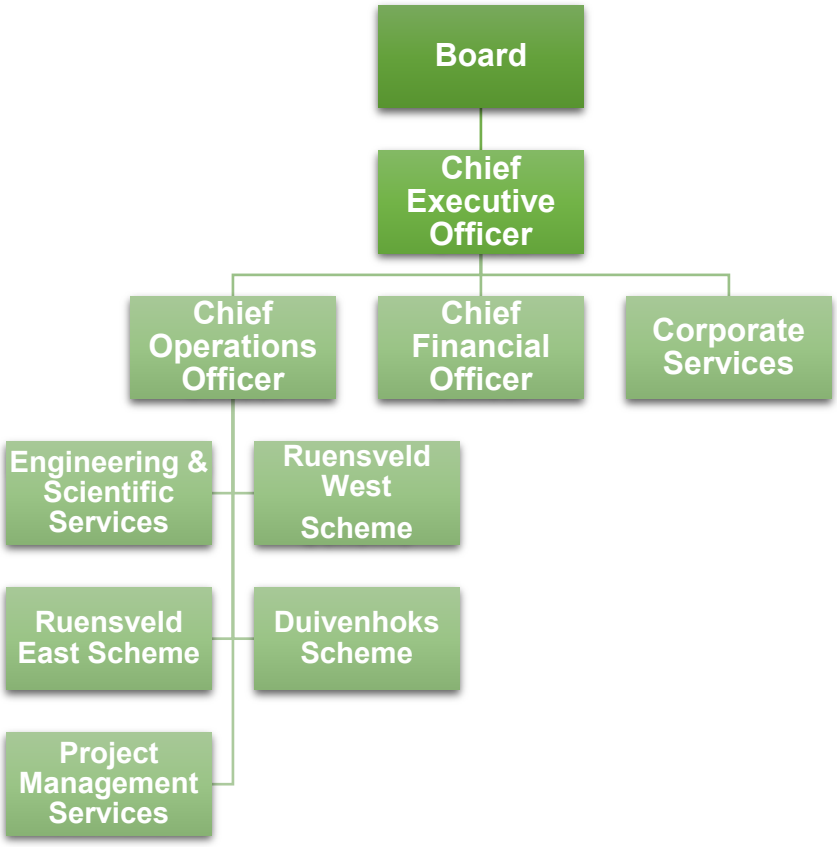
6.1.2. Performance Information

The “new normal” that is continually referred to in terms of the water status in the Western Cape, needs to be translated into a “new normal” in all institutions in planning for climate uncertainty. Water is a cross cutting issue in many of the regional business objectives, but is often not explicitly measured in terms of key performance indicators. The implicit role of sustainable water management needs to be identified in the different programmes and indicators, and it must be ensured that there are specific targets put in place, which will all work together to meeting the goals of sustainable water management.

7. Organisational Aspects

7.1. Organisational Structure



7.2. Human Capital and Corporate Services

7.2.1. Staff Policy

7.2.1.1. Staff Policy to be applied for aspects relating to all operational human resource requirements as well as external expertise requirements i.e. compensation, skills recruitment and performance measurement. A key recommendation of the NWRS is to increase our skills and capacity within the sector for both water resource management and water services. Institutions must be appropriately staffed and resourced and towards this end we will continue to prioritise skills development, staff motivation and capacity building at all levels. Increasing our regulatory capacity to improve compliance and ensure that standards and license conditions are met is an integral part of strengthening our institutional framework and capacity.

7.2.2. Housing Policy

7.2.2.1. This policy provides for a framework within which employees working at the water treatment works and offices of Overberg Water Board are allocated rental stock where applicable.

7.2.2.2. All housing allocations will be filled, where possible, in the most Operationally efficient way and which leads to minimal impact on environment and energy use.

7.2.3. Food, Accommodation and Transport

7.2.3.1. As far as practically possible, the procurement of food and accommodation should be sourced in a sustainable manner and transport of people or goods should be done in the most carbon neutral way.

7.2.4. Administrative goods/services

7.2.4.1. Overberg Water strives to be a paperless business and procurement of administrative goods/services must reflect that wherever possible. Procurement and disposal of any asset or disposable should be done in an environmentally friendly manner and follow relevant NEMA legislation and industry best practices.

7.2.5. Skills development training

7.2.5.1. Staff Policy to be applied for aspects relating to all skills, educational training and training associated with implementing environmentally friendly business practices and sustainable use of natural resources and energy.

7.2.6. Occupational Health and Safety

7.2.6.1. OH&S should supersede any project, goods or service which is sourced in terms of this Sustainability Policy.

7.3. Financial Management

7.3.1.1. Supply Chain management Policy

7.3.1.2. Supply Chain management policy to be applied whenever procurement of goods or services involves impact on environmental or energy resources. These goods or services should be sourced in an environmentally friendly manner so that the carbon footprint of the goods/service is kept to a minimum, whilst complying to all policies and relevant legislation.

7.3.2. Corporate Plan and Shareholders Compact

7.3.3. Tariff Budget Inputs

7.3.4. Inventory Management

7.3.5. Water Restrictions & Droughts

7.4. ICT

7.4.1. ICT Policy

7.4.1.1. To reduce the carbon footprint of the organization, Overberg Water will commit to using digital forms of communication as far as possible. Notwithstanding security and financial management guidelines, Record Keeping and Information Management will be digitized to streamline operational and administrative functions.

7.4.2. SMS Portal

7.4.3. Telemetric & Scada

7.4.3.1. Telemetry and Scada systems should be maintained to minimize the necessity for physical infrastructure and water level monitoring. Wherever possible, data loggers should be procured to assist with analysis of operational efficiency.

7.4.4. LIMS system

8. Operational Aspects

8.1.1. Sustainable Water Management

8.1.1.1. Minimise Losses in the Water System

In recognition of the scarcity of water, it is essential to minimise leakage throughout the water supply infrastructure. Inadequate and ailing infrastructure must be addressed to maximise the use of existing water resources; and municipalities must follow operating rules in order to maximise water supply. Non-revenue water (NRW) considers the percentage of water that enters a distribution network which is not billed by Overberg Water and therefore does not generate revenue for the ongoing maintenance of this service. This loss of revenue will have a negative impact on the financial sustainability of water services, since Overberg Water has incurred the cost of purifying and delivering the potable water into the bulk network. Non-revenue water includes real losses due to leakage or operational activities but also apparent losses associate with water that is supplied to a user and not billed. Reducing the apparent losses is addressed through Key Performance Indicator 1.2.

This policy promotes the establishment of a community of practice to share knowledge and best practice. This could be through existing forums such as the District Co-ordinating Forum technical meetings. Through this forum, the business case for effective maintenance should be developed to establish provincial water loss benchmarks to ensure that leakage is curtailed to reasonable levels and the maintenance activity provides a cost-effective strategy for the long term operation of the water distribution network. Consideration should also be given to addressing evaporation losses from dams, which becomes more significant during drought periods. Also, the improvement of wastewater quality through proper operation and maintenance of treatment works is key to ensuring that treated effluent can be re-used.

8.1.1.2. Maximise Water Reuse & Diversity of Water

Reliable access to water for fit for purpose use is fundamental to the future growth and development of the Overberg region. Inadequate and ailing infrastructure needs to be addressed as a priority to reduce water losses before developing new water resources, in line with the principle of water use efficiency. Water resources must also be managed strictly according to operating rules. Thereafter, reliable access requires a diversity of water sources to transition dependence from a single source of water, such as surface water.

Alternative sources of water include rainwater and stormwater harvesting, process water and greywater re-use, direct potable re-use of treated effluent and groundwater and desalination. There are opportunities and challenges related to each one of these options and these need to be considered before a decision is made as to the most appropriate augmentation option for a specific location. Furthermore, different infrastructure may be required to separate some of these alternative sources and this can be driven through varying building requirements for new versus existing buildings.

Consideration of the quality of water is critical to the selection of a water source and the associate purification measures. Proactive planning to prevent pollution should be a key focus. Where practical, water use should be based on the principle that the water is fit for the intended use. Potable consumption, toilet flushing, agriculture, construction or various industrial and processing applications will all have different water quality requirements which requiring greater or lesser treatment. All levels of treatment must take a risk based approach to the health and operational impacts of the water quality in use. The focus of this Strategic Objective is to enable water resilience through the sustainable abstraction from a diversity of water sources. Over-dependency on a single water source presents a high risk to water security.

Through diversification of water sources water resilience can be increased. Groundwater has a longer term recharge cycle and is less vulnerable to short term climatic variations associated with a drought. Nevertheless, climate change brings uncertainty to the recharge rate of groundwater. Climate change scenarios predict both prolonged droughts; more intense rainfall events over a shorter period which will increase run-off and reduce infiltration; as well as increasing average temperatures which may reduce the amount of snowfall in the mountain catchments. All of these scenarios will reduce the recharge rate. For this reason, groundwater should not be seen as an infinitely renewable supply as it will require good monitoring and strict management (such as shut off at set thresholds) in order not to be overdrawn. Additionally, there needs to be a significant drive towards a Water Sensitive Design (WSD) approach which prioritises the re-use of water for both potable and non-potable uses. WSD can be applied at single site, local or regional scale to achieve resilient, water sensitive users. Historically regarded as an unfavourable/challenging option due to the perceived unsanitary source, direct potable re-use of wastewater has been proven in Beaufort West (and elsewhere such as Windhoek, George etc.) and is now generally regarded as not only a viable option, but an acceptable one that is essential for diversification and augmentation.

8.1.1.3. Effective Metering and Billing of water Users

In order to promote efficient water use and to maximise revenue streams it is critical that all users are metered and billed according to their use. A review of the water pricing strategy should consider the real value of water for potable and productive uses and the willingness to pay for this water. An appropriate billing structure will promote improved water efficiency and revenue for the maintenance of services. In addition, the billing process can be used to leverage financing for broader activities central to the implementation of the Sustainability Policy.

8.1.2. Stakeholder Engagement

It is key to remember that “water is everybody’s business”, and the focus should not be limited to forums that specifically deal with water related issues, but rather an approach that includes stakeholders in all parts of the water value chain. Where appropriate the Sustainability could be a standing issue on the agenda, and issues, challenges and successes can be reported. It is essential that there be forums where civil society, business, industry, and academia are all included (not necessarily all in one forum).

8.1.2.1. Catchment Management Committees

There are several legislated committee structures for Catchment Management Agencies (CMAs) that include broad representation of water users. These committees have got influence over water resources management in the catchment, and are essential for river basin governance. These committees should be supported by all spheres of governmental and assistance offered to DWS to actively promote water stewardship initiatives across all stakeholders. It is at these committees where both incentives for better performance can be presented, as well as solutions to challenges can be debated and resolved. Transparency and information sharing is key.

8.1.2.2. Disaster Management Forums

Overberg Water and its representatives must be engaged with the disaster management forums related to the provincial water risks. In the context of the current disaster management declaration associated with the drought crisis, the aims of this policy and related plans should be embedded in the emergency response and assist effective collaboration between stakeholders. Furthermore, the medium and long terms objectives of the policy seek to mitigate the water risk and therefore the lessons learnt through the disaster response efforts should continually feed back into these plans to inform future activities and achieve improved water resilience across the region.

8.1.3. Communication

One of the key goals of the Sustainability Policy, is to enable effective communication and information Management. Furthermore, greater emphasis needs to be placed on water auditing (footprinting) across business, industry and agriculture so that it can be managed and incorporated as an enterprise risk and appropriate incentives/disincentives brought into effect. Communication, in short, can be divided into intergovernmental internal communication, and communication externally to various stakeholders. Both forms of communication are important, but may require completely different strategies. The one is to improve internal processes and effectiveness in management and implementation, the other is possible awareness and behaviour change. Providing accurate information and consistent messaging, is key to behaviour change and bringing stakeholders on board, especially during times of drought.

Online platforms are tools that can and should be able to share information effectively and efficiently – but have to be managed extremely well (possibly by a service provider as opposed to internally). In addition, online platforms to share information often don't work if they are not coupled to real-world events, efforts or collaboration. Effective communication would be to couple real-world activities and knowledge exchanges with online tools. However, to ensure effective usage of such a system, it would require enduring and effective information. Such information may be a database of best practices in a format that is user-friendly and easily accessible. The sharing and spatial overlay of key data from different authorities should also be investigated to support integrated planning.

8.1.4. Community Awareness

Promoting a culture of technological advancements and risk avoidance amongst stakeholders and staff is an integrated process of education, training and public awareness programmes supported by research empowerment programmes. When people know how to adapt to better systems and manage risks, they will be able to take action to implement changes more effectively as well as manage such risks, thereby avoiding project pitfalls later.

The successful penetration and uptake of sustainable water and renewable energy technologies depends crucially on growing a market demand in the various water and energy sectors. However, at present public awareness of the existence of such initiatives or its economic, environmental

and social benefits, is limited.

Overberg Water must invest in initiatives whereby water users are presented with comparative information on their water use in relation to other users and are provided with ideas to reduce consumption. This strategy should be coupled with a broader awareness and capacity building campaign to inform users about their broader impact on water resources, in addition to efficient water use, this should include an awareness campaign related to the connection between agriculture and our river systems to promote good stewardship and the prevention of point source pollution.

8.1.5. Service Level agreements

Overberg Water must adopt service level agreements with its customers that promotes sustainability and implementation of water provision through a reduced carbon footprint and reliance on surface water, and an increased use of renewable energy.

9. Infrastructure

9.1. Water Licenses

9.1.1. Source monitoring

9.2. Raw Water Supply

9.2.1. Existing infrastructure

9.3. Treatment Works

9.3.1. Types of technologies

9.4. Establishment of Infrastructure Performance Indicators and Reporting Mechanisms

9.5. Infrastructure Master Planning

9.5.1. Undertake Infrastructure Projects with a sustainable element

10. Maintenance

10.1. Undertake Asset Maintenance with reduced environmental impact

10.1.1. Maintenance options and determining the preferred option in terms of the lowest life-cycle cost.

10.1.2. Maintenance outcomes

a) Maintenance outcomes must be agreed and documented for every service.
    i. Risk management.

11. Energy

11.1. Energy technologies in rural water supply

The large majority of the Overberg population lives in rural areas. Most rural dwellers depend on subsistence farming and they have lately seen their crops destroyed by more severe and more frequent droughts, floods, heat waves and devastating cyclones. The changing climate pattern adds another level of problems to rural livelihoods and rural water supply. The technologies used to achieve traditional water supply to these communities will rely on energy input such as manual energy, photovoltaic panels or diesel. Offering more affordable and sustainable energy sources for water provision is essential.

There are a variety of technologies that are currently in use in different parts of Africa to access, treat, distribute and use water efficiently. Furthermore, the way these technologies are designed must also be able to adapt to climate variability. An example of this is pumps that can respond to changes in water tables/levels, or applying conservation tillage in agriculture which slows down the movement of water and conserves on fuel use and soil erosion.

Table 1 shows just some of the potential technologies, which Overberg Water must use as a starting point to start thinking about the appropriateness of a technology, in terms of end use, socio-economic impacts and improving productivity in livelihoods. There are many more innovative localised, modified and adapted technologies so it is essential to select appropriate technologies for a particular area.

Table 1: Available technologies for water supply in rural areas

Energy/fuel source	Technologies	End use
Small renewables: · Photovoltaics · Wind · Mini hydro · Biogas Diesel Gravity fed system Manual input	Pumps · Hand pump · Animal pump · Ram pump · Solar pump · Suction pump · Centrifugal pump Solar water heaters (modified SWH's- brick batch or blacksmith solar water heating) Solar still Gravity fed pipe Rainwater tank · Surface & subsurface	Water harvesting and recycling Purification Desalinisation Sanitisation Motive power – water mill to grind grain, pumping water, transport water, mechanical ploughing Irrigation Hot water: domestic

Table 2: Overarching considerations when assessing technology choice

Water source	Water provision methods: spring, dug well, drilled well, dam, catchment (Roark et al, 1989)
End use	Is the water required for: irrigation, drinking water, hot water
Energy access	Which energy sources are available for powering these technologies: sun, diesel, manual energy?
Distance from water source	Transportation of water source to end use is energy intensive, time consuming and costly
Scale: community or household level	Suitability of the technology depending on the user
Development benefits	How will this technology offer: livelihood benefits, clean drinking water
Waterborne disease	There are many health risks from waterborne diseases particularly in stagnant water.
Governance	Successful adoption and long term sustainability of a technology requires integration with existing governance structures & initiatives.
Sustainability:	
Environmental	Efficient use of available water? Is it possible to re-use water
Social	Absorptive capacity & social acceptance
Economical	What are the capital and running costs? Is the energy required available i.e, access to diesel? Affordability of renewable energy technologies

The World Health Organisation undertook a study in which it considered the resilience of certain technologies used for water supply. The major climate-related threats that affect water and sanitation technologies are grouped under three broad scenarios: increased likelihood of flooding or increased run-off, decreased rainfall resulting in declining surface and renewable groundwater availability, increased rainfall leading to long-term increases in groundwater levels (WHO, 2010). The main findings from this report highlighted that research is required to improve those technologies currently considered to have only medium resilience. There is also an urgent need to improve the knowledge and monitoring of water resources if future demands are to be met within a changing climate – particularly in relation to groundwater and non-piped water supplies. Many of the issues relating to appropriate technology choice highlighted here are already known. However an additional dimension to how we select technology, is to design for adaptation to climate variability. Outlining the considerations for selecting appropriate technologies in Table 1 and Table 2 provides an essential baseline to understand how technology choices could be modified in the context of adaptation to climate change and sustainable use of energy and water.

10. Appendices