



WATER, CHEMICAL & ENERGY SPECIALISTS



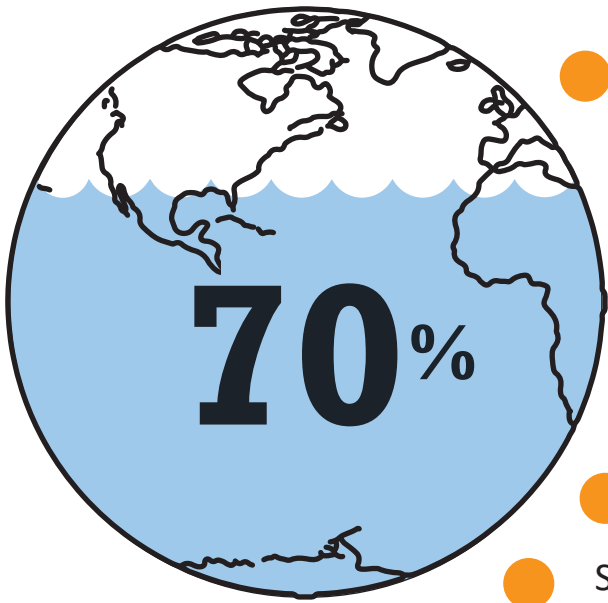
Kanku Kenya Ltd is a solutions based company that shares an immense sense of responsibility towards the environment and its management for the sustainable progress of society.

In today's world where digitisation has brought the whole globe into the palm of our hands, it is hard to believe that resources as vital and as scarce as water and energy are still far from reach when certain populations of the world are taken into consideration. Furthermore, the globe has predominantly failed to setup a comprehensive infrastructure of management around the use and disposal of these scarce resources (water & energy).

Please allow us to take you through the following pages that are aimed at emphasising the important role that water plays in our everyday lives and why we need to manage and treat this scarce but recyclable resource. We go on to display the recent developments in Africa that have opened up new opportunities for water management / treatment and the attributes required of the solutions that need to be implemented.

The last section of this booklet focuses on Kanku Kenya's portfolio of solutions & services. Aimed at aiding in the process of successful & sustainable management of our water & energy requirements, these solutions & services are both cost effective and 100% environmentally friendly.

FACTS ABOUT WATER



- Water covers 70% of the earth surface
- 97% of this water is salt water
- The other 3% is fresh water
- Of this fresh water 30% is underground
- 20% water in Kenya comes from boreholes
- Second largest fresh water bodies are in Africa Lake Victoria & River Nile

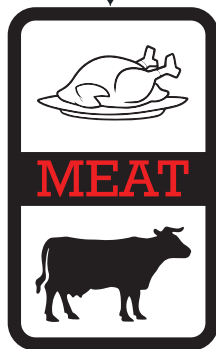
WATER IN PRODUCTION

Everyday items that require water for production



SUGAR

1 KG
270
LITRES



MEAT

1 KG
350
LITRES



MAIZE

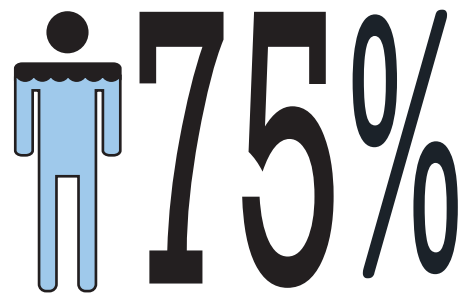
1 KG
3500
LITRES

WATER IN OUR BODIES

AVERAGE
HUMAN
BEING



GLASSES EVERYDAY

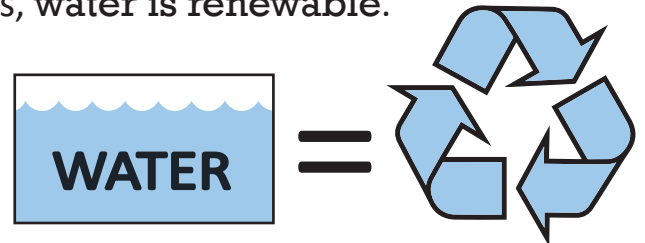


CONSISTS OF WATER

MANAGEMENT OF WATER

RENEWABLE RESOURCE

As shown previously, our lives are heavily intertwined with water. Not only is it an important resource for survival, but also a scarce one. However unlike other resources such as coal and natural gas, **water is renewable**.



SUSTAINABILITY

The implementation and management of this recyclable quality is key to ensure long term stability and sustainability of any population. As a resource, water impacts **manufacturing** in industry, **employment**, **energy production**, **agricultural produce** and **health & lifestyle choices** to name a few.



WATER SUFFICIENT

With a total of over 10,000 freshwater lakes and more than 50 rivers, Africa can comfortably be deemed as a water-sufficient continent.

Furthermore, the world's second largest freshwater lake and the world's second largest river have their base in East Africa. All these reasons give Africa the valuable advantage of fresh water abundance.



OPPORTUNITIES

OPPORTUNITIES FOR WATER MANAGEMENT

- **Regulation requirements** make it compulsory for all industrial and commercial entities to have a water management strategy allowing for new markets



- **Underground sources**
boreholes with fluoride and salts require a minimum amount of treatment before usage



- **Residential projects**

Large residential projects provide a new opportunity to explore water management at a reduced cost per household.

The marginal cost of water treatment per litre will be less due to the larger number of residents



- **Community based projects** promotes ownership and continuity of commercial water management



- **Carbon footprint**

Recycling water and implementing community-wide management techniques will promote a balanced view on consumption of both water and energy. Low overall utility costs will also help reduce our carbon footprint



THE SOLUTIONS

● ATTRIBUTES REQUIRED

● **Environmentally Freindly Solutions**

Kanku Kenya provides sound & technical solutions that are environmentally friendly. All our chemicals are also user friendly.



● **Easy and Simple implementation**

In addition to being eco-friendly, the solutions provided by Kanku Kenya are simple & easy to implement requiring minimal space for operation



● **After Sales Service**

Our services do not stop at the implementation and commissioning stage. We understand the importance of long term stakeholder relationships for efficient management of water.



OUR SERVICE PORTFOLIO

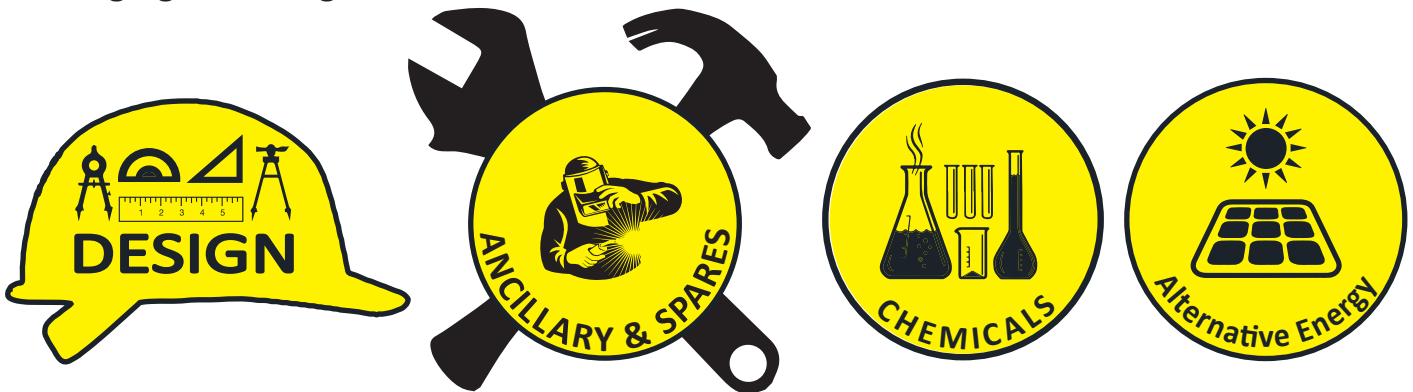


- **DESIGN OF PLANTS & EQUIPMENT**
- **PLANT ANCILLARY & SPARES**
- **SPECIALTY CHEMICALS**
- **ALTERNATIVE ENERGY**

We take immense pride in being one of the leading solutions / service providers of water & waste-water management applications. Our portfolios offer **turnkey solutions** that include divisions for Consultancy, Engineering design, Maintenance & monitoring of water treatment plants such as sewage treatment and effluent treatment.

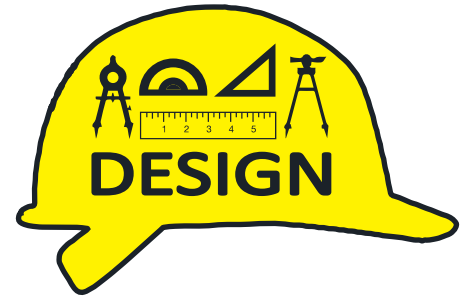
Our range of services covers the entire spectrum of project engineering including **design, fabrication, erection, testing and commissioning** of various water treatment & control equipment such as **borehole raw water treatment, water softening for boilers, reverse osmosis & nano filtration** just to name a few. We also have a **chemical division** that manufactures specialty chemicals used in waste water management processes and various other industries and enterprises that utilise water on a small or large scale.

In addition, we have a wide range of **quality, low-cost solar panels & Solar applications** that can be coupled with our water solutions to further reduce the cost of managing / treating water and waste water.



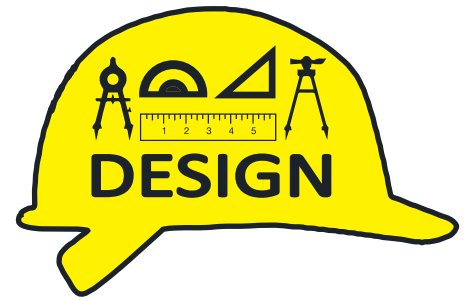
Relying on our experienced background, superlative staff, sound technical team and strict adherence to the relevant environmental norms, our company has consistently delivered on its promises.

DESIGN OF PLANTS & EQUIPMENT



- Design of water & waste water treatment plants for borehole water pre-treatment, boiler water softening, effluent treatment and sewage water treatment
- Environmental Impact Assessment
- Treatability studies for handling of effluents
- Upgrading and Rehabilitation of existing treatment plants
- Operation of treatment plants via contractual agreement
- Technical engineering drawings
- Cost-profit optimization in the installation of the project
- Solid & water waste management as per ISO:14000





- Effluent treatment plant
- Sewage treatment plant plant
- Borehole water pre-treatment plant for using ground water for industrial processes
- Reverse Osmosis plant
- Boiler Water Softening & Demineralisation
- Micro / Ultra / Nano filtration plant
- Mineral water/ Drinking water plant
- Activated Carbon & Pressure Sand filtration units
- Chemical dosing systems
- Membrane cleaning & refurbishing
- Surface aerator, Floating aerator, Clarifier, Clariflocculator, Agitator, Fume jet venturi scrubber, Solid Liquid incineration Systems
- Ozonator and Oxygen generator for chemical free decoloration and oxidation of harmful chemicals from effluents

PLANT ANCILLARY & SPARES



- FRP High Pressure Vessels

- 20" Filter Jumbo Housing

- 20" Filter Cartridge
Nylon 70 micron

- 20" Filter Cartridge
Stainless Steel 20 micron

- Electronic Dosing Pumps
6 Ltr/Hr
4 bar pressure



- Reverse Osmosis Housings
Membrane Housing FRP material
Sizes available - 4040, 4080, 8040, 8080, 80120

- Reverse Osmosis Membranes
Spiral Wound - Hydranautics
Sizes available - 4040 & 8040



- Multiport Valves
Side Mount type for Filters and Softners
Sizes available - 0.75", 1.00", 1.50" & 2.00" diameter

- EPDM & Silicone Disc Diffusers
5 m³/Hr
Bubble size 2-3mm
Sizes available - 9" & 12" diameter



SPECIALTY CHEMICALS

With many of the businesses realising the importance of corporate & social responsibility together with the onset of recent regulation around pollution control, the management of manufacturing processes and waste water generation has become that much more important as part of everyday operations.



Our range of specialty chemicals makes this management easy for various industries. Our water treatment chemicals for example are both water soluble, are 100% biodegradable and can be used in processes such as **Antiscaling, Clarification, Settling, Precipitation, Thickening, Floatation, Concentrating, Dewatering, and Filtration.**

In addition our range of specialty chemicals can be applicable to various industries such as **textile, tea, coffee, sugar, oil and natural gas extraction, mining and metallurgical, dairy, pulp & paper, hospitals and healthcare** just to mention a few.

● **WATER SEPERATION / TREATMENT CHEMICALS**

Due to their diverse range of application, our water & wastewater treatment chemicals can be generalised as “seperation aid” chemicals. In this essence various derivatives can be used to treat effluent but also aid in seperation processes such as liquor seperation from waste in the Sugar Industry or Settlement of water in Coal Washeries etc.

● **Liquid Coagulants**

Organic and inorganic coagulants formulated based on individual effluent assessment and treatability test

● **Powdered Coagulants**

Non-ionic, Anionic and Cationic granulated powders available in low, medium or high molecular weights. The charge density, degree of branching and cross-linking can also be altered as defined by the process requirement and application.

● **Flocculants**

Organic and inorganic coagulants formulated based on individual effluent assessment and treatability test

● **Applications of Coagulants and Flocculants**

Our water treatment chemicals can be applied to the following process and applications.



- Water softening for use in boilers and cooling towers
- Reverse osmosis pre-conditioning of inlet water
- Waste water treatment & sludge treatment of industrial and municipal sewage facilities
- Clarification processes that apply to filter backwash, leaching liquor of various mineral acids, sludge separation / solid settling by gravity, floatation or froth floatation, Colour removal of Sugar juice
- Boiler & cooling water antiscalants
- Antiscalants for sugar juice evaporators, reverse osmosis operations & desalination of water.
- Dispersant for pigments & paints or mud & sludge
- Thickening of hydroxide sludge
- De-oiling, de-emulsification of oily waste water
- Drinking water treatment
- Mechanical dewatering of slurries by belt-press, centrifuges & membrane filter press
- Dewatering of raw sludge, digested sludge and waste activated sludge
- Anionic trash removal, size fixing, retention & drainage aids
- Salt & soda ash processing for brine clarification
- Grinding & deflocculating aids for ceramics
- Super plasticizers for cement
- Sequestering agents for Ca^{2+} , Mg^{2+} , Fe^{2+} and other metal salts

● **ANTICORROSIVE & ANTISCALANT CHEMICALS**

We have also developed a wide range of anticorrosive chemicals aimed at increasing equipment life especially where non-stainless steel or mild steel materials of construction are concerned. The anticorrosive nature of the chemicals is based on a buffer system that enhances engineered pH balance.

In addition to this, we also have antiscalant chemicals that can be applied to Boilers and also Reverse Osmosis Plants.

● PULP & PAPER CHEMICALS



● Defoaming Agents

Made from higher aliphatic alcohol and its derivatives, our defoamers are chemically designed to prevent formation of foam during manufacture of paper

● DSR & Super Bond (Dry Strength Resin)

Our dry strength programs offer paper makers another tool to manage end-product specifications, enhance operation profitability and develop new grades. The typical benefit of our dry strength program is improved strength properties and improved runnability giving manufacturers the option of increased machine speed, reduced weight basis and to use low cost fibre.

● Optical Brightening Agents

These chemicals are primarily used to increase the brightness of the paper. The function by absorbing ultra violet light and re-emitting it in the blue region usually at 420 - 470 nm. They give excellent brightness to the paper even if unbleached.

● Paper Softner and Deinking Chemicals

In the manufacture of tissue paper, softness plays a vital role in customer satisfaction. Our softners have lubricating properties that make the fibres feel smoother and glossier.

● TEXTILE CHEMICALS

● Optical Brightening Agent

These are developed to increase the brightness of the fabric and are tetra-sulphonic based. For various fabric types, the agent is customised so that cotton, wool, polyester and other fabrics can be incorporated.

● Dye Fixing Agents

● Wetting Scouring / Stain Removing Chemicals

● Softners - Cationic, Nonionic, Reactive and Latex based

● SANITATION AND DISINFECTANT CHEMICALS

● Debac and Olklin Agents

Strong chemicals developed to minimise the risk presented by an unsanitary environment. Applicable mainly in the Dairy and Healthcare industries, these chemicals aim to keep bacterial growth to virtually zero

ALTERNATIVE ENERGY

While harnessing of solar energy has been around for quite some time, the efficiency of the process is one that has not been fine tuned to an optimal level.

Kanku Kenya is proud to present our relatively new addition to the family of environmental solutions; our humble yet efficient solar panel.



● SOLAR PANEL PRODUCTS

- Solar water pumps (3HP & 10HP)
- Solar Street Lights & garden lights (CFL, LED, CXL)
- Home lighting systems
- Solar inverters
- Solar water heaters
- Solar power packs (upto 80KW)
- Solar DC Fridges
- Solar outdoor lamps



The table below shows the relevant capacities of our panels together with the expected throughput from each.

	Electrical Ratings						
Model No	Peak Power (Pmax) Wp	Peak Voltage (Vmpp) V	Peak Current (Impp) A	Short Circuit Current (Isc) A	Open Circuit Voltage (Voc) V	Max System Voltage V	Tolerance %
12V / 80Wp	80	17.4	4.5	4.6	21.0	700	+/- 3
12V / 60Wp	60	17.4	3.4	3.4	21.0	700	+/- 3
12V / 50Wp	50	17.4	2.8	2.9	21.0	700	+/- 3
12V / 40Wp	40	17.4	2.3	2.3	21.0	700	+/- 3
12V / 20Wp	20	17.4	1.0	1.1	21.0	700	+/- 3
12V / 100Wp	100	17.4	5.7	5.7	21.0	1000	+/- 3

As the world gets smarter, sensitive and more aware towards the precious resource of water & energy, there will be created greater avenues for groups like us to work towards the preservation and development of sustainable, robust and flexible management solutions that are 100% environmentally friendly.

Our promise is a simple and sincere one: We want to make sustainable these scarce resources and explore new avenues to safeguard them just as they safeguard life itself.

Thank You



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