

AN EXPERT INDUSTRIAL JOINT VENTURE PARTNERSHIP

Providing Turnkey Industrial Solutions







Total Water Solutions
With you every step of the way





Natel Energy are experts in contracting projects that vary across Industries, Municipal, Domestic and other areas. Natel has a trained and experienced team to handle various projects, and we adhere to all the safety requirement of the projects.

Natel has vast experience and expertise in handling projects in the following areas:

-  **Civil Construction Service**
Industrial and Domestic Water Projects, Overhead and Underground Distribution Lines, Transmission Lines & Substations
-  **Electrical Service**
Industrial, Domestic & Commercial Cable Laying, Jointing and MCC Panels
-  **Maintenance Service**
Electrical Distribution and Transmissions System
-  **Erection & Commissioning**
Towers and Towers Foundations, Water Treatment Plants, Waste Water Treatment Plants & Sewage Treatment Plants



SSK Chemicals & Engineering Services is a world-class water management company providing end to end solutions for water treatment, industrial wastewater treatment, sewage treatment, desalination and Zero Liquid Discharge (ZLD) solutions at minimal costs.

We have experience in designing and treating hard to treat effluent at a very nominal cost. Our expertise lies in bringing our teams together for the seamless implementation of the project. We work to implicate new technologies, reduce footprint, save energy, and deliver a state of the art water treatment plant.

-  **Design & Engineering**
High Recovery (90%) RO Systems
-  **Equipments & Projects (EPC)**
-  **Water Treatment Chemicals**
-  **Audit & Technical Services**
-  **Automated RO Systems with Cloud Monitoring and Alert Systems**
-  **Spares**
-  **Onsite Training & Technical Solutions**

End-to-End of Water Lifecycle Solutions



5-Step Process for Integrated Water Solutions



200+
Customers Served



Customer Centric

120+
Projects Completed



Technical Expertise

45+
Employee Strength



Solution Focused Approach

Our Integrated Solutions

Utility Application	Equipment Solution	Automation Solution	Chemicals Solution	Operation & Maintenance	Technical Consultancy	Required Spares
Raw Water	✓	✓	✓	✓	✓	✓
RO Plant	✓	✓	✓	✓	✓	✓
Cooling Tower	✓	✓	✓	✓	✓	✓
Chilled Water	✓	✓	✓	✓	✓	✓
Boiler Water	✓	✓	✓	✓	✓	✓
Effluent Treatment Plant	✓	✓	✓	✓	✓	✓
Sewage Treatment Plant	✓	✓	✓	✓	✓	✓

RO Plant Data Sheet

Model	RO 150	RO 350	RO 600	RO 850	RO 1000	RO 1500	RO 2500	RO 3500	RO 5000	RO 6000	RO 8000	RO 10000
Product Flow (LPH)	150	350	600	850	1000	1500	2500	3500	5000	6000	8000	10000
Reject Flow (LPH)	450	520	600	570	670	2250	2500	2330	2140	2570	3430	3330
Recovery (%)	25	40	50	60	60	40	50	60	70	70	70	75
RO Treated Water Quality - TDS	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Average Flux Rate (LMH)	18.9	22.1	25.3	26.9	21.1	20.1	22.4	23.5	22.4	26.9	26.9	22.4
Operating Pressure (Bar)	8 - 10	10 - 11	11 - 13	11 - 14	9 - 12	8 - 10	9 - 11	9 - 12	10 - 12	11 - 14	11 - 14	10 - 13
Membrane Size (Inch)	4	4	4	4	4	8	8	8	8	8	8	8
Membrane Quantity (Nos)	1	2	3	4	6	2	3	4	6	6	8	12

Raw Water Quality

Parameter	Unit	Value
pH		6.5 - 7.5
Total Suspended Solid	mg/l	5 - 10
Turbidity	NTU	5 - 10
Iron as Fe	mg/l	0.1
Total Dissolved Solids (TDS)	mg/l	2000
Calcium Hardness as CaCO ₃	mg/l	210
Magnesium Hardness as CaCO ₃	mg/l	140
Total Hardness as CaCO ₃	mg/l	350
Sodium as Na	mg/l	500
Potassium as K	mg/l	9
Total Alkalinity as CaCO ₃	mg/l	320
Sulphate as SO ₄	mg/l	200
Chloride as Cl	mg/l	650
Nitrate as NO ₃	mg/l	100
Fluoride as F	mg/l	1
Reactive Silica as SiO ₂	mg/l	30

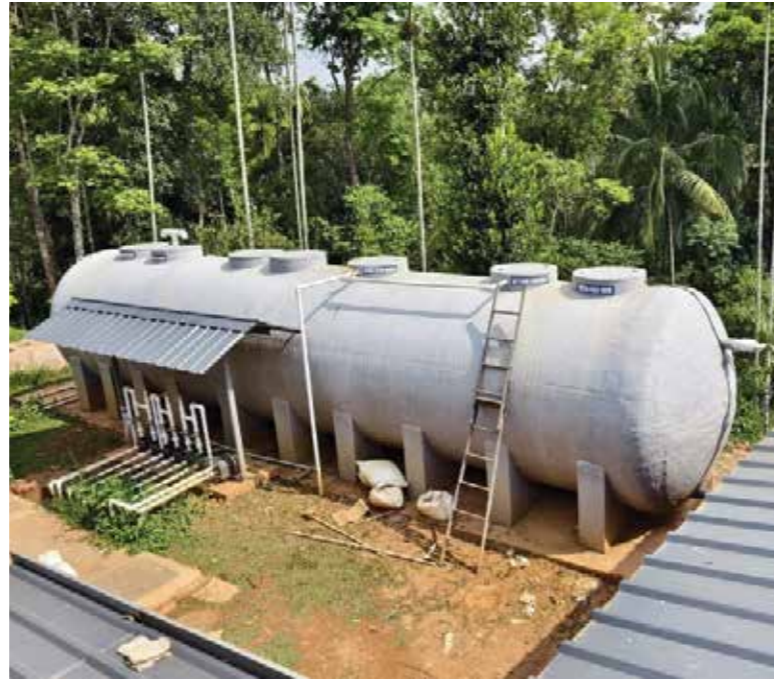


Sewage Treatment Plant

Packaged Sewage Treatment Plant (PSTP)

SSKCES Packaged Sewage Treatment Plant (PSTP) is housed in specially designed and highly durable FRP tank. These tanks are compact which can be utilized in a decentralized manner at any location, either it's underground or above the ground.

The SSKCES Packaged STP is designed to bring the treated sewage parameters (BOD, COD, TSS, TN etc.) below the permissible limit which is stipulated by the Environmental Norms. MBBR technology is used in this system.



Process Description of SSKCES Package STP

1. Preliminary Treatment

The influent sewage water passes through a bar screen to remove all the large objects like cans, rags, sticks, plastic packets etc. which are carried in the sewage stream.

2. Secondary Treatment

a. Anaerobic Zone

The first stage of PSTP is an oxygen-depleted anaerobic zone in which the solids in raw sewage gets settled while allowing the scum to float on the surface. It is a zone in which the settled sludge is stabilized by anaerobic digestion.

b. Anoxic Zone

The sewage then enters the anoxic zone in which denitrification of the wastewater stream is accomplished by returning the activated sludge from the final sedimentation zone to the anoxic zone; wherein dissolved oxygen levels are maintained approximately as 0.2 to 0.5 mg/l. In the denitrification process, anoxic microbes break down to the existing nitrates, this results in the release of inert nitrogen gas into the atmosphere.

c. Aeration Zone

The sewage from solid separation zone flows into the aeration zone. Air is diffused with the help of air blowers which encourages the growth of bacteria cultures in and around the floating plastic media added in the aeration zone. The MBBR media provides the extended surface area for the growth of microorganisms.

d. Sedimentation Zone

The next step of treatment involves the sedimentation zone where organic waste is settled. The settled waste in the bottom of the tank is pumped back to the anoxic zone as a return sludge, which is done to ensure that the quality of effluent must pass the stipulated sewage parameters.

3. Tertiary Treatment System:

The secondary treated sewage is then passed through the Pressure Sand Filter and Activated Carbon Filter for the removal of suspended solids (TSS), colour, and odour. The treated water is then disinfected using sodium hypochlorite before it is reused.

Scheme

- Influent
- Bar Screen Chamber
- Anaerobic & Anoxic Zone
- Aerobic MBBR Zone
- Final Sedimentation
- Filter Feed Tank
- MBBR Media
- Air Blowers
- Recirculation Pump
- Filter Feed Pump
- Pressure Sand Filter
- Activated Carbon Filter
- Disinfection
- Air Vent
- Treated Water Tank

Application and Uses

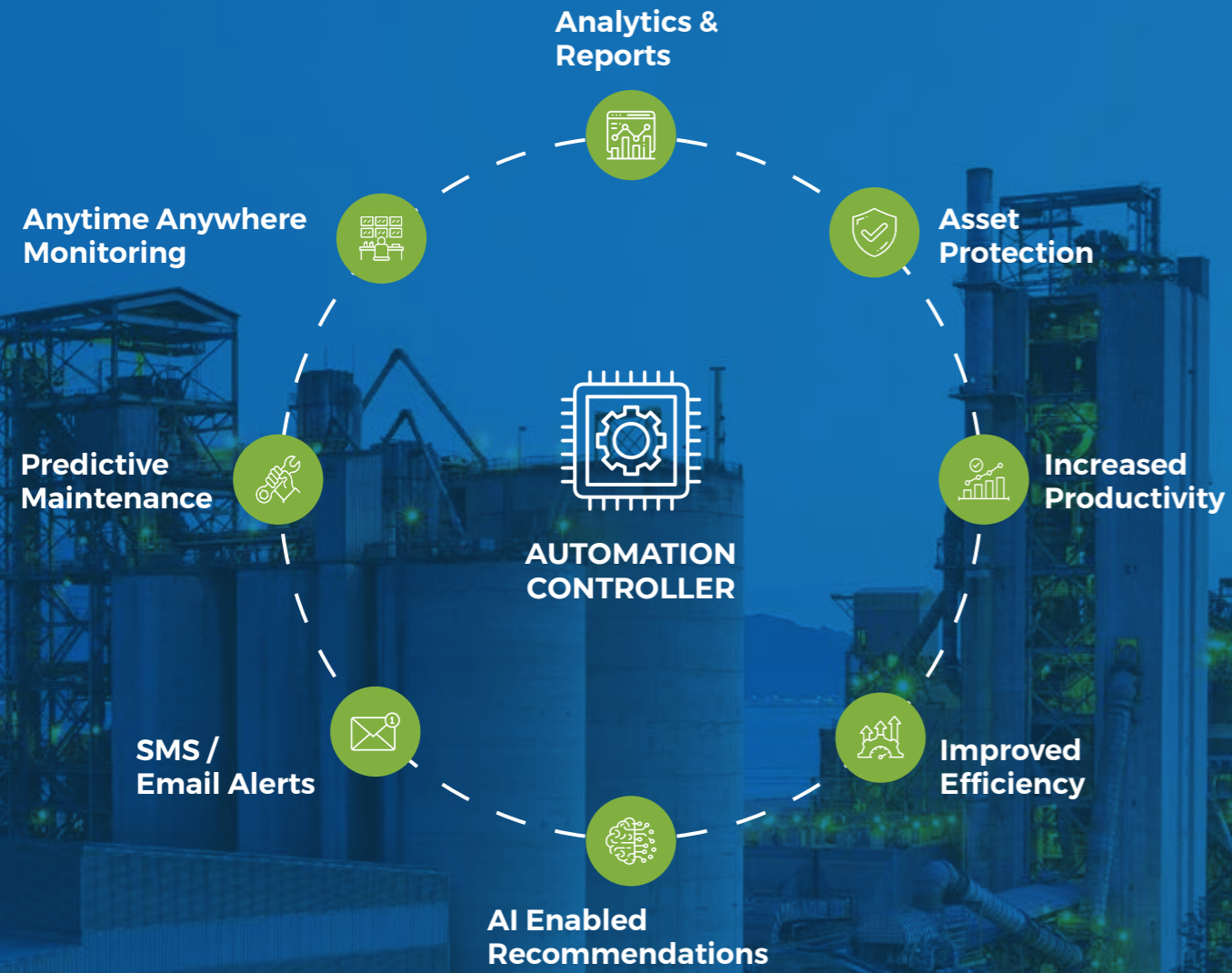
- Residential and Commercial Complex
- Public Garden and National Park
- Hotel & Resorts
- Restaurants
- Industries
- Institutions
- Hospitals
- Temples
- Government Offices
- Labour Quarters
- Township
- Hostels

Benefits

- Compact design helps reduce 40% space as compared to a conventional STP.
- Single FRP tank design with virtually no civil work required.
- Wide range capacity from 5 KLD to 100 KLD.
- Modular with easy and quick underground/above ground installation within 3 to 5 days.



Automation



Spares



RO Plant



RO Membrane



UF Membrane



Dosing Pump



Packaged Effluent Treatment Plant



Sludge Dewatering Equipment - Screw Press



RO Membrane Pressure Vessel



Mechanical Diaphragm Pump



Automatic Multiport Valve



UPVC Filter Housing



Air Blower



UV System



Activated Carbon



Resin - Softener & DM Plant



Micron Cartridge Filter



Rotameter - Flow Meter



Lamella Clarifier (Color & TSS Removal Unit)



Disc Type Fine Diffuser - STP & ETP



Iron Removal Media



MBBR Media - STP & ETP



Coarse Diffuser - STP & ETP



Tubular Diffuser - STP & ETP



Chemical & Sludge Transfer Pump (Metalic & Non - Metalic)



Contracting Projects

Civil Construction Service



Water projects



Distribution lines



Transmission lines



Substation

Water Projects

- Water Treatment Plant
- Clarifier
- Flocculator
- Cascade Aerator
- Aeration

- Rapid filtration system
- Sludge Thickener
- Water distribution lines
- Underground distribution line



Electrical Service

The Department deals with construction of all types of lines from Low voltage networks, service lines, HT lines from 11-33kV and pertinent substation installation.

Installation & Commissioning of :

- All Type of Electrical Panel
- Motors & Generators
- Pumps
- Cable laying
- Termination



Electrical Panel



Generator



Cable Laying

Maintenance Service

- Pumps
- Motor
- Generator
- Clarifier
- Aeration
- Water distribution line
- Overhead line



Pumps



Electrical distribution



Motor Services



Project Portfolio



Finding faults at the Main LV Panel of NFRA Sumbawanga



Testing of transformer at the NFRA Kanondo Sumbawanga



Technical discussions at the scene of incidence-Dole Site



Line of Three members Poles on heavy angle at Kasinde village



Natel officials and NFRA Sumbawanga Management in a group photo



Testing of transformer at the NFRA Kanondo Sumbawanga



Project progress Briefing to ruling party leaders at Songwe Region



Installation of Data cabinet for CCBRT hospital project



Installation of HT Switchgear at Arusha Technical college-Kikuletwa Moshi



HT Switchgear commissioning at Arusha Technical college-Kikuletwa Moshi to Shinji



Installation of MY SILO GRAIN STORAGE PLANT AT TANGA



Main MV Switchgear for CCBRT hospital project



CSR to Shinji Secondary School at Songwe by Natel Energy Company



Natel technicians together with Inspection team discussing with some labourers working at Kasinde village



Commissioning of Main LV Panelboards at CCBRT hospital project



LV Line at Namkukwe village Songwe



Workers on duty at Dole project



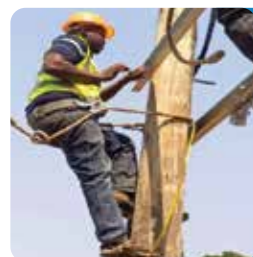
Installation of Ground Transformer at Musoma Airports



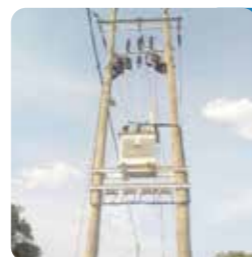
Installation of three-member poles in the heavy terrain or long span-Songwe



Natel vehicle delivering the Line conductors at Songwe



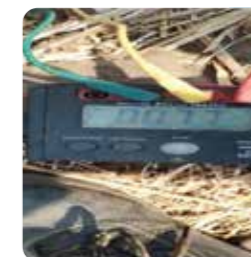
Natel technicians on duty for installation of Transformer at Mfenesini Project



Installation of Transformer line and underline LV at Chafuma village-Songwe



Fixing X-arm for the single section pole



Transformer Earthing Reading



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Manufacturing Units, INDIA



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