



KARACHI WATER & SEWERAGE CORPORATION

PRESENTATION

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SEQUENCE OF PRESENTATION

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KARACHI WATER & SEWERAGE CORPORATION

We are responsible for production of bulk water, distribution of water supply, treatment and disposal of waste water and collection of water tariff from the residents of Karachi having a population of Over 20 Million. Karachi is the economic hub of Pakistan. About 70% of the country's revenue is collected from Karachi.





KARACHI WATER & SEWERAGE CORPORATION'S STATS

Performance Indicator	2024
Number of KW&SC Towns	27
Total Population (Million)	20.30
Population Served (Million)	17
Service Coverage (Pc.)	83.70%
Total Connections (No.)	1,069,987
New Connections Per Year (No.)	22,000
Metered Accounts (No.)	3,609
Staff per 1000 Connections (No.)	9.50
Billing Efficiency (Pc.)	35.68 %
NRW (Pc.)	61%
Monthly Operating Cost (Pkr Million)	2,475
Monthly Electricity cost (<u>supported by Government</u>) Pkr Million	(1,476)
Net Operating Cost (Pkr Million)	1,059
Monthly Revenue (Pkr Million)	1,700
Revenue Collection Rate (Pc.)	35%
Total Area of Land (Acre)	34,832

Performance Indicator	2024
Continuity of Supply	(9hr/day)
Drinking water Coverage (Pc.)	83%
Customers with 24/7 Supply (Pc.)	20%
Female Employees (Pc.)	03%
Metered Connection (Pc.)	0.30%
Sanitation Coverage (Pc.)	89%
KW&SC Legal Water Hydrants (No.)	07
Network Length	11000 KM
Filtration Plants (No.)	09
Main Water Source (No.)	02
Tertiary Pumping Stations (No.)	236
Suction & Jetting Trucks (No.)	120
Manhole Cover & Slabs Manufacturing Plant (No.)	01

PRINCIPAL WATER SUPPLY FACILITIES IN KARACHI



Seasonal Source

Primary Source



Indus Source
580
MGD

Hub Source
70
MGD

THE THREE BIG CHALLENGES

- 1. AGING INFRASTRUCTURE OF WATER & SEWERAGE**
- 2. HIGH PERCENTAGE OF NRW**
- 3. CAPACITY BUILDING & INSTITUTIONAL DEVELOPMENT**

AGING INFRASTRUCTURE

The Karachi Water and Sewerage Corporation grapples with aging infrastructure causing frequent leaks and inefficiencies. Outdated water pipelines and sewerage infrastructure compromise the services, leading to shortages and contamination.

NON-REVENUE WATER

The Karachi Water and Sewerage Corporation (KW&SC) faces significant challenges due to non-revenue water (NRW) losses. These losses, attributed to factors such as leaks, theft, inaccurate metering and non-paying customers affect the financial viability of KW&SC. The aging infrastructure exacerbates the problem, leading to inefficient water distribution and financial losses for the utility.



CAPACITY BUILDING & INSTITUTIONAL DEVELOPMENT

The Karachi Water and Sewerage Corporation (KW&SC) faces challenges stemming from lack of capacity building within the organization. Inadequate training programs and skill development initiatives have left the workforce ill-equipped to handle evolving complexities of water management. Insufficient knowledge on modern technologies, crisis response, and efficient resource management hampers KW&SC's ability to address the growing demands and challenges in the sector.



**Ensure availability
and sustainable
management of water
and sanitation for all**



TARGETS OF SUSTAINABLE DEVELOPMENT GOAL 6 (SDG)

SDG Target 6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all

SDG Target 6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations

SDG Target 6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

SDG Target 6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity, and substantially reduce the number of people suffering from water scarcity

SDG Target 6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate

SDG Target 6.6 By 2030, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes

SDG Target 6.1

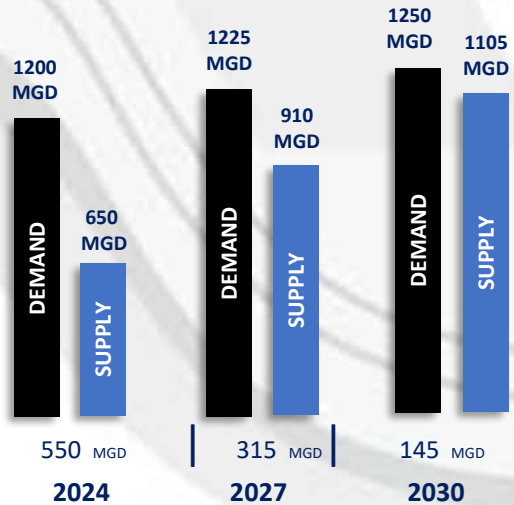
By 2030, achieve universal and equitable access to safe and affordable drinking water for all

INCREASE IN WATER SUPPLY FOR KARACHI PLANNED PROJECTS:

- K4 (Greater Karachi Bulk Water Project)
260MGD Project Phase 1(Indus River source new intake)
- Hub Canal embankment elevation
(Augmentation Of **30 MGD** supply(Hub Dam))
- **65 MGD** additional bulk water project (Indus River source old intake)
- Desalination plants & sub-soil water (100 MGD)

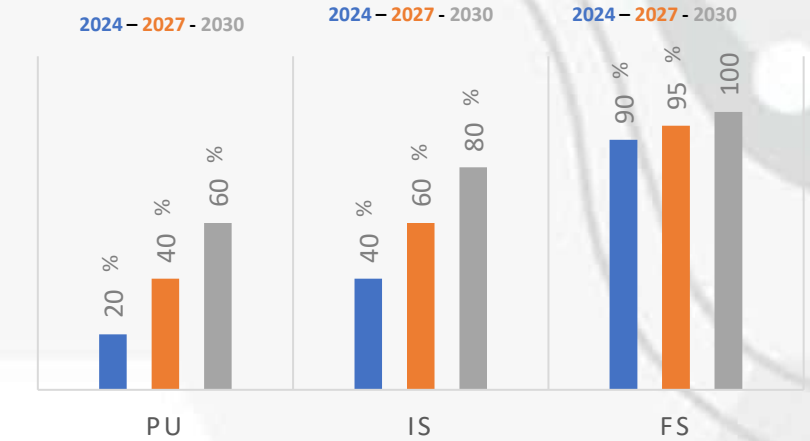


SUPPLY & DEMAND GAPS



INCREASE IN DISTRIBUTION OF WATER

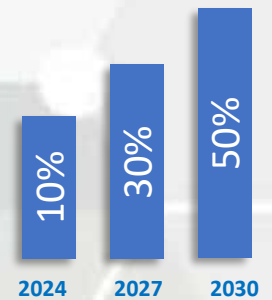
Peri-urban, Informal Settlements & Formal Settlements



SMART WATER GRIDS

(SCADA)

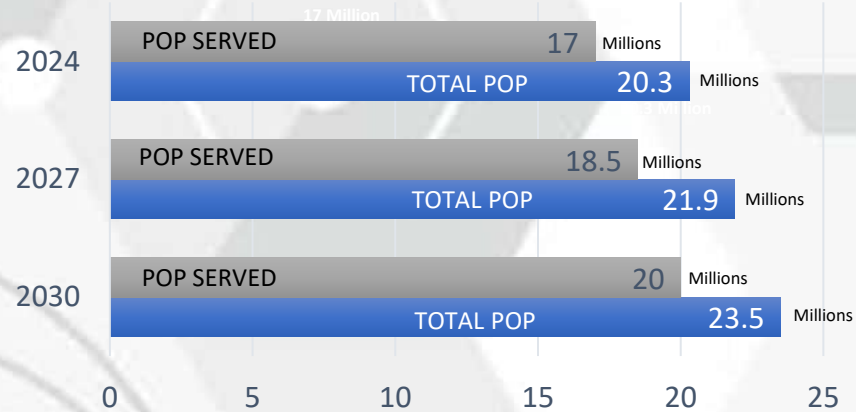
Bulk flow meters, individual industrial meters automated valves, digital metering etc.



SDG Target 6.1

By 2030, achieve universal and equitable access to safe and affordable drinking water for all

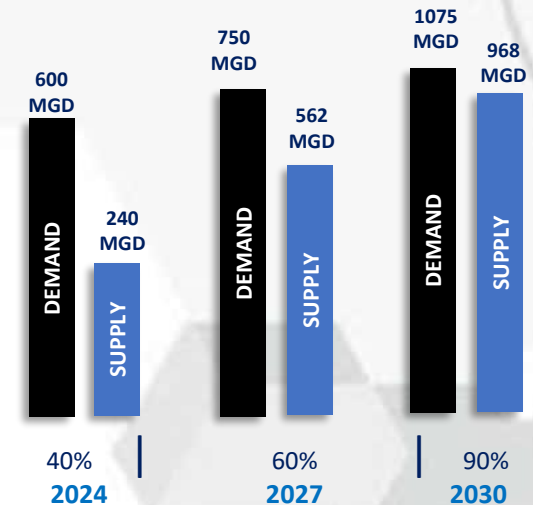
INCREASE IN POP. SERVED (PGR 2.35%)



SAFE WATER DELIVERY

Establishment of 04 new and rehabilitation of 02 existing filtration plants, 29 intermittent chlorination stations and 200 water quality monitoring station units at tertiary pumping stations.

INCREASE IN FILTRATION CAPACITY



NRW REDUCTION

Water loss in bulk water, leakages in water trunk mains, illegal connections, unbilled customers and defaulters.



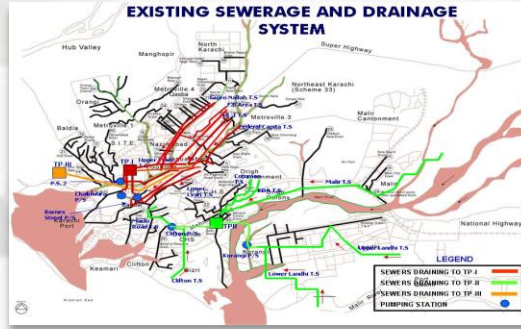
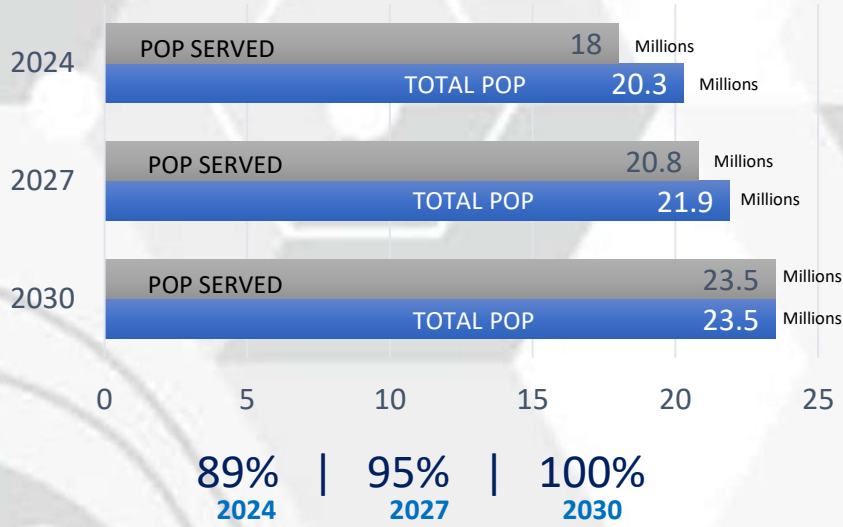
Year 2024

Tariff Rationalization For peri-urban, formal & informal settlements as well as industrial & commercial units.

SDG Target 6.2

By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations.

CITY SEWERAGE COVERAGE



SEWERAGE CONNECTIONS IN KATCHI ABADIS



YEAR 2024

SERVICE QUALITY Improvement and rehabilitation of sewerage in low income communities

MINIMUM EFFLUENT STANDARDS and monitoring mechanism

WASH ACTIVITIES

Engagement of NGOs, CBOs with Katchi Abadi Cell of KW&SC

YEAR 2027

COMMUNITY SEPTIC TANKS

To be arrange where sewer network is not available

REHABILITATING SEWERAGE NETWORK

in selected low-income communities, Establishment of Model Katchi Abadis, Katchi Abadi cell in KW&SC

PRIORITY SEWER NETWORK

Rehabilitation and Extension of trunk sewers and interceptors – District wise plans

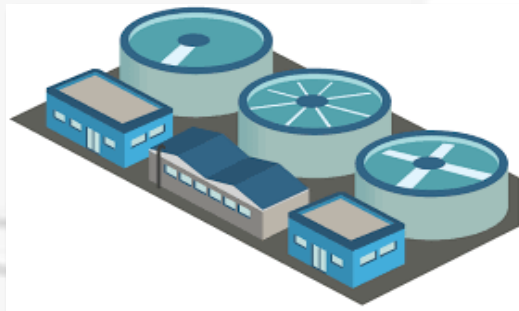
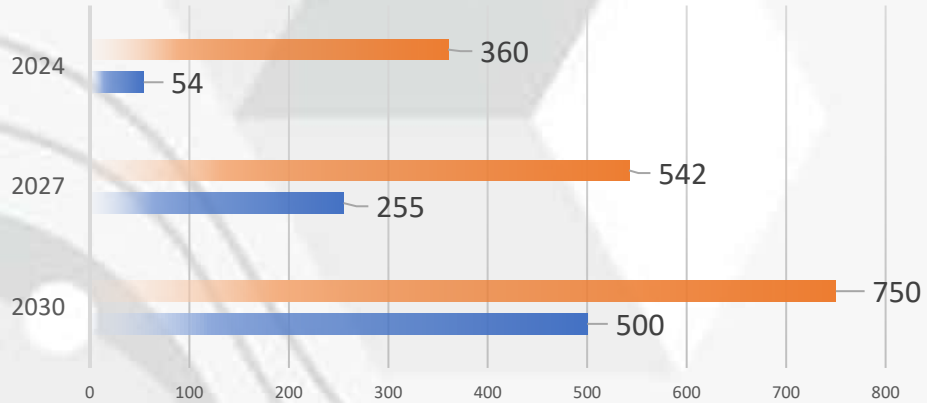
SDG Target 6.3

By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals & materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

KARACHI WASTE WATER TREATMENT PLANTS

Capacity optimization of STP-I & STP-III of Greater Karachi Sewage Plan (S-III)

- Malir Basin Interceptor 180 MGD & Treatment Plant 120 MGD (TP-IV)
- Waste Water Treatment Plant TP-V capacity 50 MGD
- New treatment plants under PPP



REDUCING WATER POLLUTION

- Carbon capturing (TCAF) 40 million USD
- Sludge Re-use program
- Carbon capture and bio-utilization projects
- Laying of interceptors and sewers

YEAR 2027

RECYCLING OF WASTE WATER

Waste Water Recycling Plant TP-I capacity **35 MGD**

Waste Water Recycling Plant TP-III capacity **40 MGD**

YEAR 2030

RECYCLING OF WASTE WATER

Waste Water Recycling Plant TP-IV capacity **20 + 20 MGD**

COMBINED EFFLUENT TREATMENT PLANT

Industrial Zones **30 MGD**

KW&SC ANNUAL CAPITAL INVESTMENT

Dedicated to expanding the sewage collection and treatment systems.



SDG Target 6.4

by 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity, and substantially reduce the number of people suffering from water scarcity

YEAR 2024

INSTITUTIONAL REFORMS

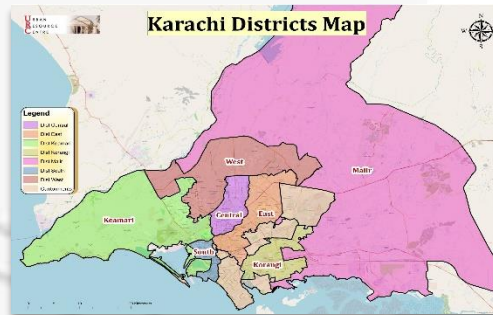
Enforcement of Sindh Water Policy and KW&SC Act, capacity building & trainings, communication programs, institutional strengthening of KW&SC through recruitment of Reform Managers, establishment of Environmental Sustainability & Gender Mainstreaming Cell

PERFORMANCE BASED CONTRACTS

Outsourcing customer survey, enhancement of tax base, distribution of bills & recovery of tariff

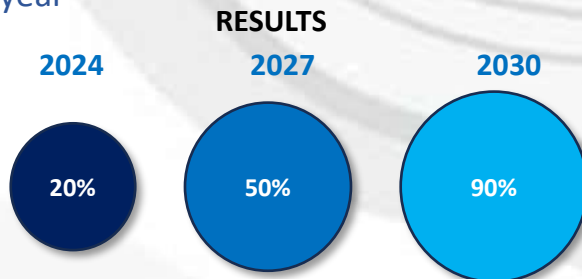
COMMENCEMENT OF LINING WORKS OF 43-KM-LONG

K.B. Feeder Upper Canal from Indus Source to Karachi will save 800+ cusecs of fresh water



REACH-OUT PLAN

through social media campaigns for water conservation techniques - Year by year



YEAR 2027

CERRI (CENTER OF RESEARCH, REFORMS AND INNOVATION)

Water Reuse And Recycling, Digitization of Assets & Processes, Strategic Policy Making, NRW Reduction Strategies, Leakage Detection & Repair, Demand Management, Ground Water Recharging, Atmospheric Water Harvesting, Cloud Seeding

URBAN PLANNING & ZONING

Preparation of KW&SC Master Plan along with hydraulic model of water supply & sewerage

YEAR 2030

AUTOMATION

- District Meter Areas, Water Flow Meters & Consumers Meters
- GIS & Data Collection
- SCADA

YEAR 2024

DEVELOPING IWRM PLAN

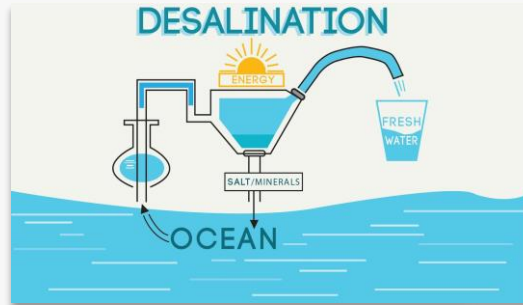
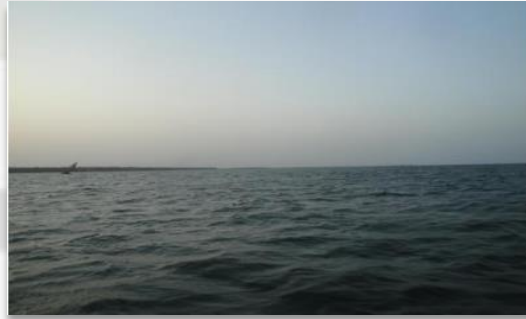
Establishment of Inter-disciplinary Water Resource Department, Preparation of IWRM Action Plans for KW&SC, Strategy to Preserve Existing Water Resources

CROSS SECTORAL COORDINATION

Other Utility Companies, Local Governments, Administrative Departments of the Government including Agriculture & Irrigation Department, CBOs & NGOs, Land Owning Agencies & Municipal Bodies

PRIVATE SECTOR PARTICIPATION

Research & Knowledge Sharing, Introduction of Pilot Projects



YEAR 2027

ENSURING SUSTAINABILITY OF FRESH WATER

Implementation of Action Plans, Ecological Study of Kinjhar Lake Securing Water from Indus River Source, Lining of Canals Upstream Kotri Barrage, Special Allocation for Karachi City in Water Accord 1991

WATER DESALINATION PROJECTS

Implement SWRO Strategy in Close Cooperation with Private Sector & Complete De-Salination Plants of 50 MGD

YEAR 2030

RECYCLED WASTE WATER FOR INDUSTRIAL USE 125 MGD

YEAR 2024

ENVIRONMENTAL SUSTAINABILITY

Ecological study conducted by NESPAK (KW&SC Owner's Engineer), preservation of Haleji Lake, Study to expand reservoir capacity of Hub Dam, preparation of Ground Water Extraction & Recharge Policy, Regulations & their implementation, Energy Audit of the pumping stations, feasibility studies for tapping Green Energy Sources including Solar Energy and Wind Corridor available in abundance at KW&SC, collaboration with International Agencies for implementation of viable projects



YEAR 2030

DIVERSION OF SEWERAGE FROM STORM WATER DRAINS

Sewerage System shall be De-linked from Storm Water Drains

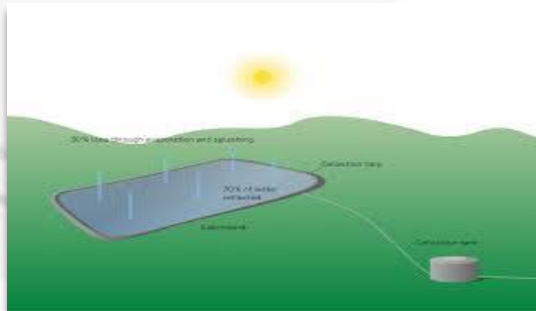
COMPREHENSIVE IMPACT ASSESSMENT

Of Water-related Ecosystems
Through Mapping and Monitoring
Satellite Imagery And Remote Sensing Technologies, To
Track Changes In Indus Source Over Time- Due To The
Impact Of K-IV Extraction

YEAR 2027

WATER CONSERVATION INTERVENTIONS

Ground Water Recharge Projects, Rain Water Harvesting, Extensive Leakage Detection & Repair Program, Strict Implementation of Effluent Discharge Standards into Water Bodies



STRATEGIES

SERVICE DELIVERY

YEAR 2024

A WATER LOSS REDUCTION PROGRAM to plug the leakages and stem NRW restricted to 40% or less

WATER DEMAND AND SUPPLY STUDIES to cover the next 5, 10 and 20 years.

OUTSOURCING AND MONITORING OF WATER HYDRANTS (Task Completed)

MINIMUM EFFLUENT STANDARDS & MONITORING MECHANISM for discharging effluent into sewerage network

KATCHI ABADI CELL to improve services to the poor established and fully functional. (Task Completed)

ALL CUSTOMER SERVICE/ COMPLAINTS to be resolved within 30 days (Task Completed)

ADDITION AND REHABILITATION of Customer Care Centers (in Progress)



YEAR 2027

ALL CUSTOMERS SHALL BE CONNECTED with formal sewerage network if existing within 10 meters away from sewer network

AT LEAST 60 PERCENT OF WASTE WATER shall be safely collected and disposed off

YEAR 2030

95% DELIVERY OF BILL AND RECEIVABLE SYSTEM below 60 days

ALL CUSTOMERS HAVE "AUTOMATIC METER READ" technology meters

WATER SUPPLY SERVICE & WATER ATMS available everywhere in KW&SC service area including Katchi Abadis

AT LEAST 15 PERCENT OF KW&SC ANNUAL CAPITAL Investments programs dedicated for sewage collection and treatment

STRATEGIES

INSTITUTIONAL DEVELOPMENT

YEAR 2024

CORPORATIZATION

- **“KW&SC Act.** (Forward looking enterprise legislation) Implementation with alignment of Corporatization (Autonomous body)”. Increase operational & financial autonomy to transform the utility into profitable organization. **(Task Completed)**
- **Hiring of Market based CEO** for corporate governance and other C-level Executives in Finance, IT, Engineering, HR, Legal Affairs, Customer Services & Planning. **(Task Completed)**
- **Re-composition of BOD** - Professionals with relevant expertise. **(Task Completed)**

HRM POLICY IMPLEMENTATION

HR Strategies for diversity/accountability/transparency.

GENDER MAINSTREAMING

A special cell for gender mainstreaming is established at KW&SC. Significant increase of newly recruited female employees such as Communication Officers, Project Directors, Secretary, Engineers & Customer Services Officers **(ongoing)**

CUSTOMER SERVICES & PLANNING

7 Services centers, 24/7 Call Centers, Smart applications for customers & engineers for promptly resolution of complains, live dashboards to monitor the processes and performances.



YEAR 2027

PAPERLESS ENVIRONMENT

ERP Solutions for process and recording of data, online billing, E- filing, digital record achieving, digital receipts, Smart mobile applications etc.

LEGAL FRAMEWORK STRENGTHEN Utility & resource regulation, monitoring & compliance, customer protection & redressal, fully functional water and sewerage Tribunals.

CUSTOMER PROTECTION & REDRESSAL

Grievances Redressal Mechanism, Term & performance-based contracts for redressal of complaints.

ADAPTATION OF SMART COMMUNICATION AND IT TECHNOLOGIES

SCADA, SAPS, Digitalization of processes, automation of operations, Smart reporting portals etc.

YEAR 2030

ADDITION IN PERCENTAGE OF FEMALE STAFF raised up to 10%

STRATEGIES

FINANCIAL VIABILITY

YEAR 2024

TARIFF RATIONALIZATION

VOLUMETRIC TARIFF FOR METERED CUSTOMERS

Installations of meters in industrial areas

UNIFORMITY IN SERVICE POLICIES

For all types of customers (Governmental /Commercial /Residential/Industrial)

SEPARATE COST ACCOUNTING

For water and sewer services based on operational cost for each. Proposing sewerage tariff in monthly bill.

ESTABLISHMENT OF INVESTMENT FINANCIAL CELL

for feasibility & planning of viable projects under Public-Private Partnership

INCENTIVIZE RECOVERY MECHANISM

For long-outstanding payables. Outsourcing contractors are onboard.

ASSET MANAGEMENT STUDY

For moveable and immovable Assets



Duplicate Bill / Web Copy

KARACHI WATER & SEWERAGE BOARD
CITY DISTRICT GOVERNMENT KARACHI
WATER, SEWERAGE, CONSERVANCY & FIRE BILL

CONSUMER NO.	TOWN CODE	BILLING PERIOD	ISSUE DATE	DUE DATE
W E	Z-JAU	Mar-2023	03-04-2023	20-04-2023
NAME & ADDRESS		CURRENT	ARREARS	TOTAL
Bilcheckerpk		0	4410	4410
PLOT SIZE (SQ. YDS)		Water	0	0
ADDITIONAL STORES		Sewerage	0	0
PLOT SIZE (SQ. FT)		Conservancy	0	1259
1300		Fire	0	1259
BILLING AND PAYMENT HISTORY		Basic Charges	0	0
Month	Amount Billed	Amount Paid	Payment Date	Amount & Arrears Due Date
				21734
				0
				21734



YEAR 2027

EXTERMINATION OF ILLEGAL CONNECTIONS

80% illegal connections shall be regularized or disconnected

BILL DISTRIBUTION & RECOVERY EFFICIENCY

Shall be increased to 80% using outsourcing strategy

LIFELINE TARIFF SLABS

For lowest category of service users (subsidized prices)

YEAR 2030

EXTERMINATION OF ILLEGAL CONNECTIONS

100% illegal connections shall be regularized or disconnected

NRW REDUCTION TO 25%

ENERGY SAVING PROGRAM

Shall be developed and implemented

BILLING EFFICIENCY

Shall be increased to 100 percent

STRATEGIES & INVESTMENT OPPORTUNITIES

PRIVATE SECTOR PARTICIPATION

YEAR 2024

O&M OUTSOURCING STRATEGY covering a five-year period shall be prepared by CEO and implemented by the approval of BoD.

KW&SC WILL PURSUE PRIVATE SECTOR FINANCING where possible for selected infrastructure.

THE PROVINCIAL GOVERNMENT WILL PROVIDE GUARANTEES to promote private sector investments in KW&SC infrastructure assets.

YEAR 2027

PRIVATE SECTOR OUT-SOURCING STRATEGY shall be operational and bi-annually reviewed

A KW&SC BOARD APPROVED STRATEGY is in place to promote and enable the private sector provision of potable water and/or water for industrial use for KW&SC.

YEAR 2030

PRIVATE SECTOR CONTRACTS IN PLACE for provision of potable water and/or water for industrial use for KW&SC with a combined value of at least PKR 1 billion.

S.NO	PROJECTS	CAPACITY
1	Waste Water Treatment & Recycling	300 MGD
2	Desalination (SWRO)	50 MGD
3	Bulk Water Supply Projects	65MGD
4	K-4 Augmentation Project	91 KM long MS Pipeline
5	Rehabilitation of Hub Canal	30 MGD
6	Solarization of KW&SC's Installations	40 MW
7	Wind corridor from Kinjhar to Dhabeji	70 KM long 650 MGW
8	Bulk Flow Meters	231 Nos.
9	Industrial Meters	5000 Nos.
10	Establishment of District Meter Areas	26 Nos.
11	Water Filtration Plants (06)	330 MGD

EXISTING COLLABORATIONS



ACHIEVEMENTS

MILESTONE ACHIEVEMENT IN YEAR 2023

OPERATION AGAINST ILLEGAL HYDRANTS, ILLEGAL WATER CONNECTIONS & SUB SOIL NETWORKS

206 illegal hydrants demolished,

1100 illegal connections were disconnected,

163 arrests were made & 183 FIRs lodged,

300 vehicles Impounded which were found involved in illegal water business

20 licenses revoked.

IMPACT

25 MGD water is returned in to the distribution network of KW&SC. Water supply cycle is improved throughout Karachi. The value of this water theft was more than 11 billion per year.



ESTABLISHED HYDRANT MANAGEMENT CENTER

24/7 round the clock professional monitoring of water hydrant operations and tankers involved in the business of portable water delivery.

Surveillance of legal hydrants through CCTV
Flow meters with SCADA to monitor suspected water theft at hydrant.

Unique QR Code identity installed at every tracker with all the details about vehicle & Driver as well as state of the art GPS tracking system installed to track tankers on real time basis.

Over pricing of the water is controlled through E-Slips provided to customers at the time of delivery of water.

Geo-Fencing of the 200 illegal pockets are created in the software which are also being monitored

IMPACT

Established Writ of KW&SC
Revenue Increased from 70 million month to 180 million
Expected revenue growth will be 250 million/ Month
Illegal water mafia disrupted
Delivery of safe water through tankers are assured

ACHIEVEMENTS

MILESTONE ACHIEVEMENT IN YEAR 2023

KW&SC GROSS REVENUE INCREASED

From Rs.1.30 billion to Rs. 1.71 billion per month. 30% increase of total revenue for the months of October & November 2023

REVIVING THE DECAYING INDUSTRIES

Marble industry is one of the oldest industry of Karachi which was deteriorating due to shortage of water. KW&SC has provided 100 new connections and 200 connections are under process. The resurgence of the industry will not only fuel economic growth but also bolster foreign reserves.

DIGITALIZED TIME ATTENDANCE SYSTEM

Installed at 50 offices of KW&SC system Streamlining workforce management, enhancing efficiency, accuracy, and accountability in tracking employee attendance.



MANHOLE COVER FACTORY A manhole cover factory is established to cater the demands of manholes in the city. The factory is producing 500 covers everyday.

INDUCTION OF SUCTION AND JETTING MACHINES including 2 Mobile Workshops to facilitate and advance sewage network A Total of 120 Suction and Jetting Machines are performing their function in the city to handle sewerage operation efficiently. The initiative has enhanced KW&SC's capability of Sewerage operations

ESTABLISHED SOCIAL MEDIA CELL to reach-out the customers



An aerial photograph of a large, circular stadium with a blue field, surrounded by a cityscape. The stadium has a prominent metal structure in the center. The image is overlaid with a dark blue filter.

THANK YOU