

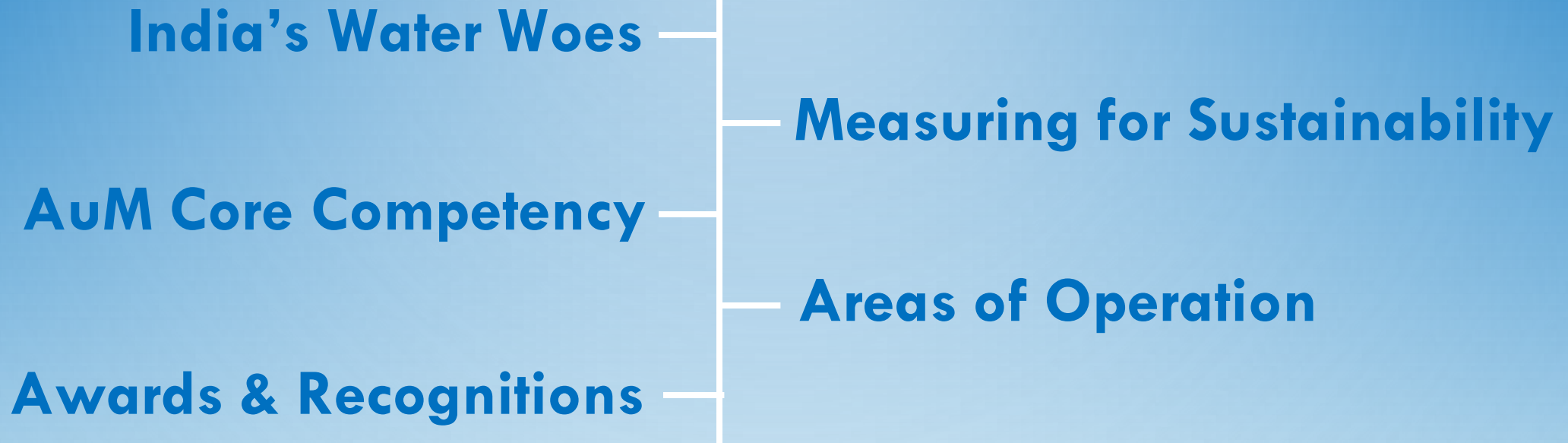
WATER MANAGEMENT SOLUTIONS FOR THE WATER & WASTEWATER INDUSTRY

AUTOMATION AND MAINTENANCE MANAGEMENT SYSTEMS

PRAKASH MUTHUSWAMY
MANAGING PARTNER

www.aumsystems.com

CONTENTS



AuM Vision: To Leverage Current, Cost-effective Technology & Provide Highly Competent Resources for Meeting Tomorrow's Needs

INDIA'S WATER WOES

- Available data on river water very old and inaccurate.
- Water deficiency and drought experience in many parts of the country, even close to metro cities.
- River water used for irrigation is not properly accounted.
- Municipal water systems often have losses up to 50%.
- Continuous expansion of piped networks where losses are already high, without improvements in water accounting.
- Groundwater availability is grim in many areas.
- Wastewater is mostly untreated and unquantified.
- Suboptimal reuse of treated effluents in our country.

Opportunities

- Providing competent resources and appropriate cost-effective solutions.
- Specialists who can acquire accurate and reliable data which will serve to improve the water management.

MEASURING FOR SUSTAINABILITY

- With the “Har Ghar Nal Se Jal” scheme, fair allocation of water for Drinking, Agriculture and Industries is a challenge.
- Climate changes causing unpredictable weather conditions also affects agriculture.
- Agricultural yield can be affected by up to 50% due to unavailability of sufficient rain water.
- To ensure food security for our population, more control over food production is needed.
- Owing to unpredictable climate, planning ahead for the next 5 years is key.
- Reliable measurements to ensure availability of water plays a crucial factor and is **the Foundation** on which other plans can be realized.

AUM CORE COMPETENCY



- Water accounting in pipes of various materials, size ranging from 15 mm to 6000 mm.
- Conducting citywide wastewater flow study in cities like Agra, Varanasi, Patiala etc.
- Carrying out water network audit and study for cities and towns.
- Associating with premier educational institutes for conducting water usage studies.
- Long term river flow monitoring study.
- Providing flow measurement solutions for power plants in penstocks, cooling water intakes & outlets (from irrigation canal) with open channel flow metering.
- City wide monitoring and NRW management solution, with SCADA & billing application.
- Providing very high accurate metering solution for water management in cities and towns.
- Consultancy services for designing appropriate current technology water monitoring solutions.

AREAS OF OPERATION

Irrigation Canal,
Water ways monitoring

City wide metering & water
management solutions
for smart cities /AMRUT cities

Industrial discharge or
wastewater
measurements for cities

Monitoring, Control,
SCADA and IoT
Solutions



Flow metering for
penstocks, Power plant
intakes, Cooling water
circuits

Municipal or industrial
water audits

long term river
flow study

Consultancy services to
provide optimized
Monitoring, Control,
SCADA and IoT
Solutions

1. IRRIGATION CANAL, WATER WAYS MONITORING

- Quantification of volumes discharged through irrigation channels.
- Facilitating States to account bulk water flows through canals.



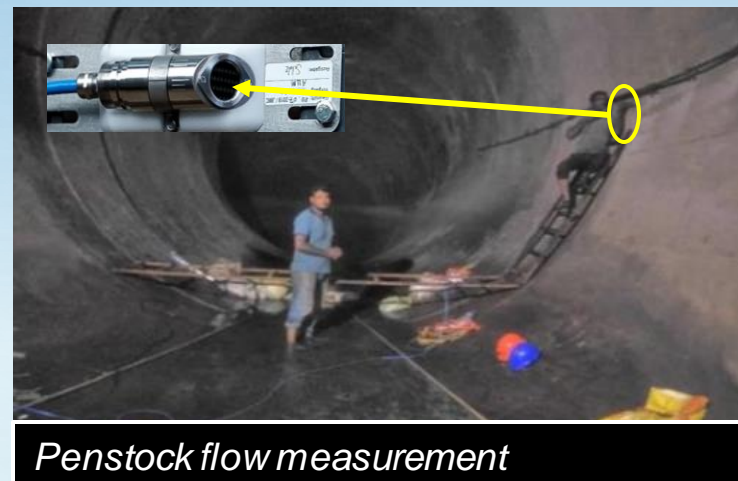
POTENTIAL BENEFICIARIES
Department of Irrigation and Flood Control

PROJECT REFERENCE

S.No	Customer Name	Product/Project
1	GSECL - Ukai Thermal Power Station, Gujarat	Design, Supply, Erection & Commissioning of open channel flow meters at inlet and outlet of cooling water from Ukai left bank main canal to Ukai GSECL TPS

2. FLOW MONITORING FOR PENSTOCKS, POWER PLANT INTAKES, COOLING WATER CIRCUITS

- Flow measurements for power and process industries.
- Measurements in both pipe as well as channels.



POTENTIAL BENEFICIARIES

- National Hydroelectric Power Corporation (NHPC)
 - National Thermal Power Corporation (NTPC)
- Nuclear Power Corporation of India Limited (NPCIL)
 - State Electricity Boards
 - Process Industries

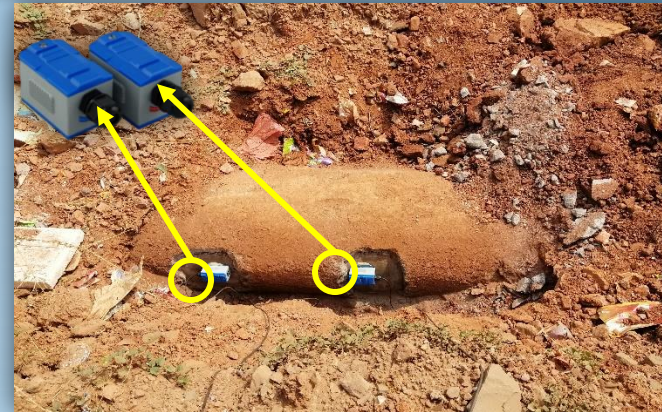
2.FLOW MONITORING FOR PENSTOCKS, POWER PLANT INTAKES, COOLING WATER CIRCUITS

PROJECT REFERENCE

S.No	Customer Name	Product/Project
1	GSECL - Ukai Thermal Power Station, Gujarat	Design, Supply, Erection & Commissioning of open channel flow meters at inlet and outlet of cooling water from Ukai left bank main canal to Ukai GSECL TPS
2	GSECL - Kadana Hydro Power Station, Kadana, Gujarat	Supply, Erection, Testing and commissioning of Online Multipath Ultrasonic Flow measurement system for 6000mm Diameter Penstock
3	Voith Hydro Pvt Ltd Automation, Noida	Flow Monitoring Services at NHPC SAINJ HEP
4	THE INDURE PVT.LTD.	Flow Measurement and Verification of CW, ACW and DMCCW Pumps at RRVUNL Chhabra Site.

3. CITY WIDE METERING & WATER MANAGEMENT SOLUTIONS FOR AMRUT CITIES AND SMART CITIES

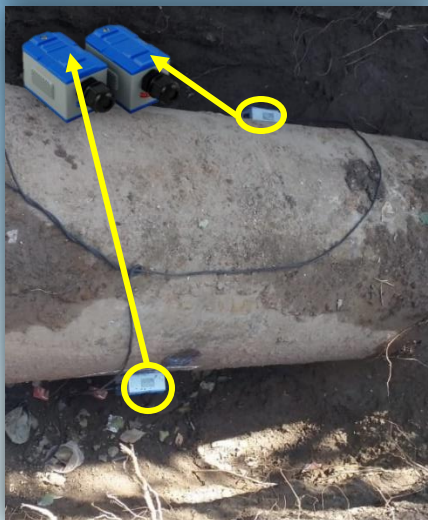
- City-wide water network management.
- Highly accurate measurements.
- Easy and cost effective installation practices.



Cost effective installation procedure



Map View of a Metering Area in SCADA



POTENTIAL BENEFICIARIES

- Municipal Corporations
- Water Authorities

3.CITY WIDE METERING & WATER MANAGEMENT SOLUTIONS FOR AMRUT CITIES AND SMART CITIES

PROJECT REFERENCE

S.No	Customer Name	Product/Project
1	Municipal Corporation of Greater Mumbai	Design, Supply, Installation, Testing, Commissioning Of Flow Meters
2	Thrissur Municipal Corporation- WET (Water Efficient Thrissur) [UL Technology Solutions Pvt Ltd.]	Supply, design, testing, installation, commissioning of Smart water meters, Bulk flow meters, Level transmitters , Smart Utility Application & Online Billing software and Web based customer redressal System.
3	Tamilnadu Water Investment Corporation, Chennai	Water Audit Services in 27 AMRUT Cities in Tamil Nadu.
4	Tamilnadu Water Investment Corporation, Chennai	Water Audit Services at 10 DMAs in Chennai Smart City in Tamil Nadu
5	KITCO LTD. Kochi	Technical performance and service delivery assessment of 10 multi GDP water scheme in the state of Kerala.

3.CITY WIDE METERING & WATER MANAGEMENT SOLUTIONS FOR AMRUT CITIES AND SMART CITIES

PROJECT REFERENCE

S.No	Customer Name	Product/Project
6	Larsen & Toubro Ltd, Hubli	Water audit in Hubli-Dharwad DB, Karnataka
7	Larsen & Toubro Ltd, Kalaburgi	Water audit in Kalaburgi city DB, Karnataka
8	Suez Projects Private Ltd, Coimbatore	Coimbatore Smart City 24x7 Water Monitoring - First Part

4. MUNICIPAL OR INDUSTRIAL WATER AUDITS

- Industrial and municipal water auditing services for a specified time duration.
- Water auditing for process industries like steel plants, oil refineries etc.



550mm, Transmission Line
Concrete Lined Mild Steel Pipe



700mm, Transmission Line
Concrete Lined Mild Steel Pipe



650mm, WTP Inlet
Mild Steel Pipe



900mm, Raw Water Pumping Station Outlet
Mild Steel Pipe



350mm, OHT Inlet
HDPE Pipe



POTENTIAL BENEFICIARIES

- **Municipal Corporations**
 - **Water Authorities**
- **Process Industries like Steel plants, Oil refineries, Breweries etc.**

4. MUNICIPAL OR INDUSTRIAL WATER AUDITS

PROJECT REFERENCE

S.No	Customer Name	Product/Project
1	Tamilnadu Water Investment Corporation, Chennai	Water Audit Services in 27 AMRUT Cities in Tamil Nadu.
2	Tamilnadu Water Investment Corporation, Chennai	Water Audit Services at 10 DMAs in Chennai Smart City in Tamil Nadu
3	KITCO LTD. Kochi	Technical performance and service delivery assessment of 10 multi GDP water scheme in the state of Kerala.
4	GEA BGR Energy System India Ltd, Chennai	Flow Monitoring Services at Fabrication Unit, Poondi
5	JK TYRE & INDUSTRIES LTD, Chennai Tyre Plant, Sriperumbudur	Flow Monitoring Services at Chilled Water Plant
6	ION EXCHANGE(INDIA) PVT. LTD. ,Chennai	Flow Monitoring at CPCL Desal Site
7	EcSol , Hyderabad	Flow Monitoring Services for APPM Plant in Rajahmundry

4. MUNICIPAL OR INDUSTRIAL WATER AUDITS

PROJECT REFERENCE

S.No	Customer Name	Product/Project
8	TWAD Board, Coimbatore	Flow Monitoring in Dispute Resolution Issues
9	Indian Oil Corporation Limited, Baruni Refinery	Flow measurement of Water streams/ condensate/ BFW for water study at IOCL Baruni Refinery
10	Indian Oil Corporation Limited, Guwahati Refinery	Water flow survey at IOCL Guwahati Refinery
11	Consilium Automation and Power Protection Pvt Ltd., Kochi	Flow Monitoring in Fire Hydrant System at Mangalore
12	Tata Consulting Engineers, Bangalore	Discharge measurements for a river in Andhra Pradesh for a period of One Year
13	Larsen & Toubro Ltd, Hubli	Water audit in Hubli-Dharwad DB, Karnataka
14	Larsen & Toubro Ltd, Kalaburgi	Water audit in Kalaburgi city DB, Karnataka

5. INDUSTRIAL DISCHARGE OR WASTEWATER MEASUREMENT FOR CITIES

- City-wide waste water flow measurements.
- Measuring industrial discharges into rivers.
- Permanent measurement as well as flow studies possible with portable instruments.
- Provide assistance for pollution control boards and industries in ascertaining the inflow to the water bodies.



POTENTIAL BENEFICIARIES

- Sewage Treatment Plants (STP)
 - Municipal Corporations
- State Water & Wastewater Boards
 - Pollution Control Boards

5. INDUSTRIAL DISCHARGE OR WASTEWATER MEASUREMENT FOR CITIES

PROJECT REFERENCE

S.No	Customer Name	Product/Project
1	Municipal Corporation Mayiladuthurai, Sewage Treatment Plant	Flow Monitoring Services at Mayiladuthurai STP Inlet
2	Municipal Corporation Maraimalai Nagar, Sewage Treatment Plant	Flow Monitoring Services at STP Inlet
3	Palladam Municipality	Sewage Flow measurement service in Palladam Municipality
4	Kangayam Municipality	Sewage Flow measurement at various season of 5 repetitions in Kangayam Municipality
5	Arshiya Consulting Engineers Private Limited, Haryana	Flow measurement on Choti Nadi & Badi Nadi at (10 major locations for 72 hours & 115 locations for 24 hours)

5. INDUSTRIAL DISCHARGE OR WASTEWATER MEASUREMENT FOR CITIES

PROJECT REFERENCE

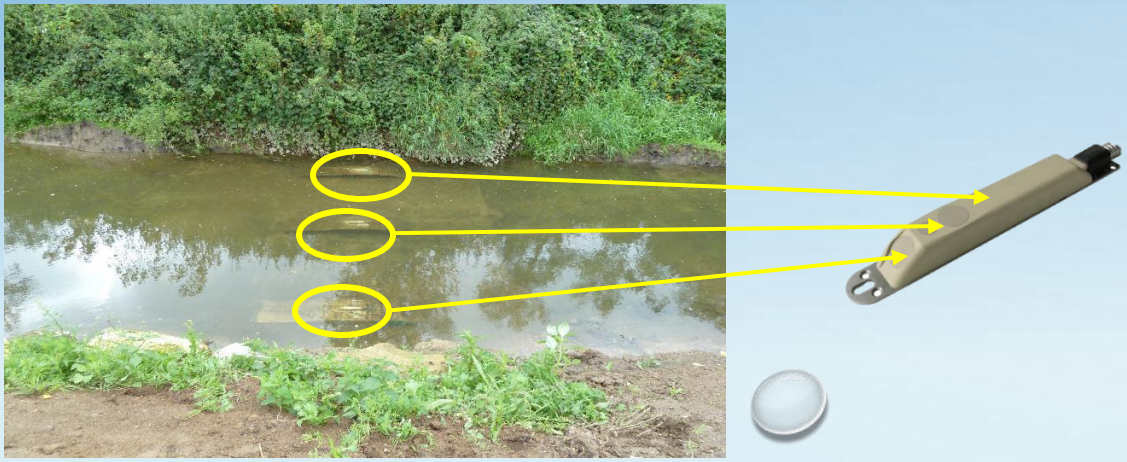
S.No	Customer Name	Product/Project
6	Shriram EPC Limited, Varanasi	Flow measurement at various points in the Kashi, OTS
7	VA Tech Wabag Ltd, Chennai	Sewage Flow measurement service at 12 Locations in Agra City for a duration of 24 hrs.
8	Dharapuram Municipal corporation	Sewage Flow measurement service in Dharapuram Municipality for a period of 3 days.
9	IISc, Bangalore	Carrying out flow measurement at various points in open channels as well as pipes
10	Econix design consortium, Delhi	Carrying out wastewater flow measurement at various points in open channels
11	Econix design consortium, Delhi	Carrying out wastewater flow measurement at various points in open channels

6. LONG TERM RIVER FLOW STUDY

- Study of flow patterns in rivers for a period of time.
- Battery powered permanent metering for remote locations.



River flow measurement



- POTENTIAL BENEFICIARIES**
- New & Renewable Energy Development Corporations
 - Central Water Commission
 - Water Resources Department

6. LONG TERM RIVER FLOW STUDY

PROJECT REFERENCE

S.No	Customer Name	Product/Project
1	Tata Consulting Engineers, Bangalore	Discharge measurements for a river in Andhra Pradesh for a period of One Year

7. MONITORING, CONTROL, SCADA, AND IOT SOLUTIONS



Ultrasonic Flow Transmitter



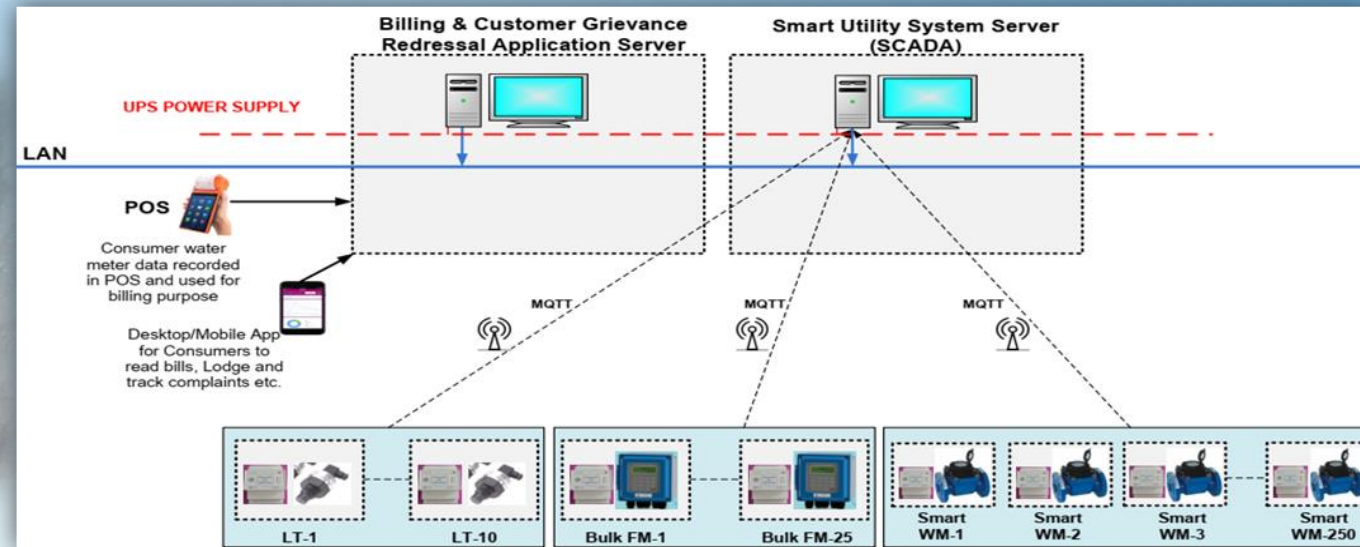
Ultrasonic Level Sensor



Ultrasonic Clamp-On Flow Sensor



Map View of a Metering Area in SCADA



Monitoring System Architecture

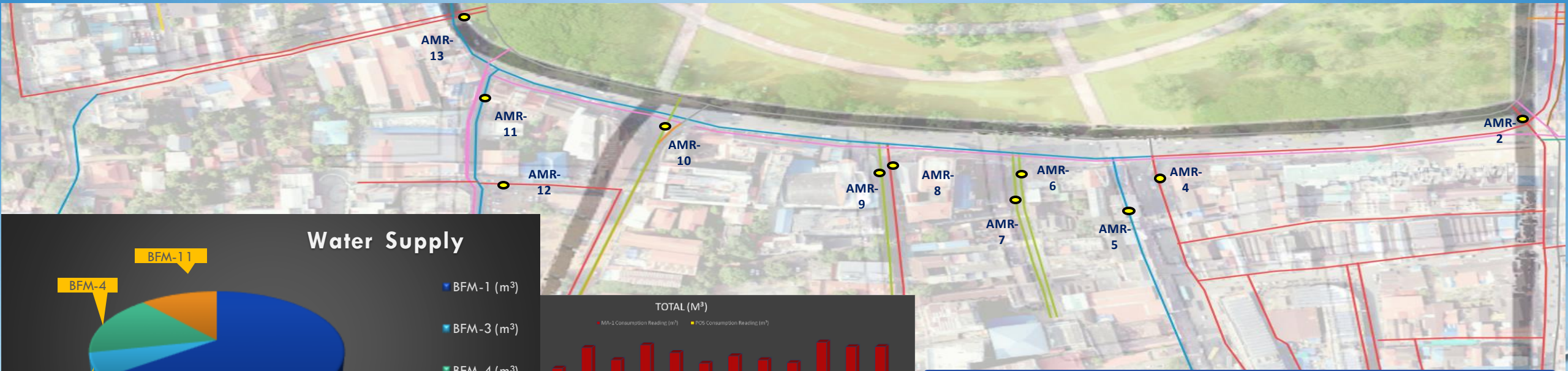
7. MONITORING, CONTROL, SCADA, AND IOT SOLUTIONS

PROJECT REFERENCE

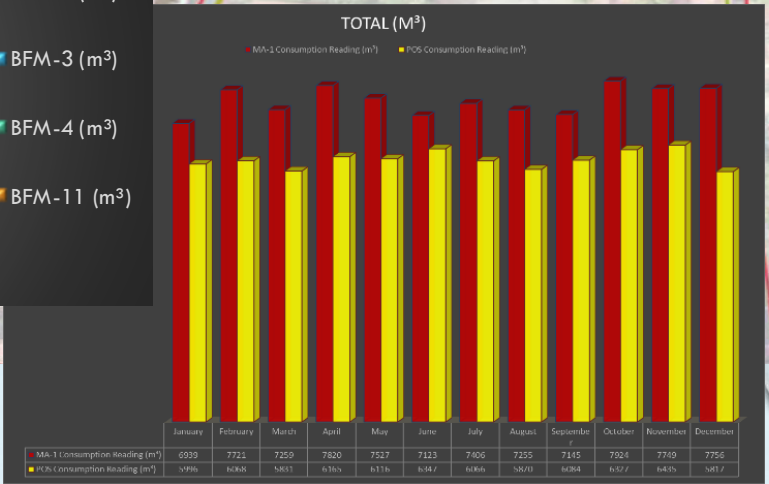
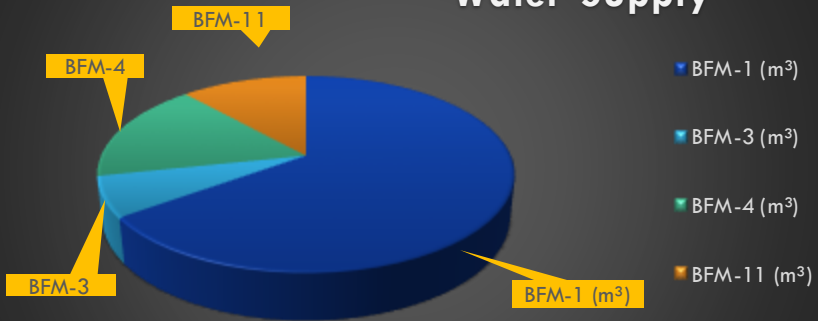
S.No	Customer Name	Product/Project
1	Thrissur Municipal Corporation-WET (Water Efficient Thrissur) [UL Technology Solutions Pvt Ltd.]	Supply, design, testing, installation, commissioning of Smart water meters, Bulk flow meters, Level transmitters , Smart Utility Application & Online Billing software and Web based customer redressal System.

8. CONSULTANCY SERVICE TO PROVIDE OPTIMIZED MONITORING, CONTROL, SCADA, AND IOT SOLUTIONS

- A team with decades of experience in the consulting background for water and wastewater systems control and instrumentation.
- Identifying and providing appropriate, site specific instrumentation solutions for clients.



Water Supply



POTENTIAL BENEFICIARIES

- Municipal Corporations
- Water Authorities
- Water and Wastewater Boards

8. CONSULTANCY SERVICE TO PROVIDE OPTIMIZED MONITORING, CONTROL, SCADA, AND IOT SOLUTIONS

PROJECT REFERENCE

S.No	Customer Name	Product/Project
1	Thrissur Municipal Corporation-WET (Water Efficient Thrissur) [UL Technology Solutions Pvt Ltd.]	Supply, design, testing, installation, commissioning of Smart water meters, Bulk flow meters, Level transmitters , Smart Utility Application & Online Billing software and Web based customer redressal System.

REFERENCES IN TAMIL NADU

WASTEWATER MONITORING: KANGEYAM MUNICIPALITY, PALLADAM MUNICIPALITY, MARAIMALAI NAGAR – CHENGALPATTU, MAYILADUTHURAI MUNICIPALITY

POTABLE WATER AUDITS: 27 AMRUT CITIES, CHENNAI SMART CITY, COIMBATORE CORPORATION, TWAD BOARD – COIMBATORE, AQUAMATRIX SYSTEM PRIVATE LIMITED, CHENNAI, JK TYRE & INDUSTRIES LTD CHENNAI, ION EXCHANGE(INDIA) PVT. LTD. CHENNAI

INSTRUMENTATION SOLUTIONS TO CLIENTS: R. ARAVIND ENGINEERS & BUILDERS, CHENNAI PALLAVARAM MUNICIPALITY, LARSEN & TOUBRO LTD, CHENNAI, COASTAL ENERGEN PVT.LTD THOOTHUKUDI, AMR ENGINEERING AND CONSTRUCTION TECHNOLOGY MADURAI, LABTECH ELECTRONICS CHENNAI, TWIC - CHENNAI, BGR ENERGY SYSTEMS LTD CHENNAI, RELIANT GLOBAL GREEN ENERGY & CO., COIMBATORE, JK TYRE & INDUSTRIES LTD CHENNAI, INDIAN INSTITUTE OF TECHNOLOGY CHENNAI, UVK SUSNOMICS CHENNAI, SJ INDUSTRIES CHENNAI, ORCHID ENERGY & UTILITY SERVICES CHENNAI, GREENVILLE OMR APARTMENTS CHENNAI, VICTUS DYEING'S THIRUPPUR



POTABLE WATER & WASTE WATER FLOW MEASUREMENTS IN TAMILNADU



Maraimalai Nagar, Chennai



WHOMSOEVER IT MAY CONCERN

This is to certify that AuM Systems(AUTOMATION AND MAINTENANCE MANAGEMENT SYSTEMS), Coimbatore., have provided flow monitoring / survey services, using portable clamp-on metering, to help Coimbatore Corporation with water flow data in the summer months.

AuM Systems(AUTOMATION AND MAINTENANCE MANAGEMENT SYSTEMS), services were found to be accurate and competent and helped us to manage the summer water distribution needs and even to detect some leaks from the water network, of different pipe sizes(250mm dia to 1100mm dia), in different pipe materials. The metering equipment from German Manufacturers Flexim and Nivus gave good performance.

With Regards

[Signature]
 City Engineer
 City Municipal Corporation
 Coimbatore.

[Signature]
 A-E



Kangayam Municipality


Siruthuli
 Clean Koval. Green Koval.

Chairman
Dr. S V Balasubramaniam
 Chairman,
 Bannari Amman Group of Companies

Managing Trustee
Smt Vanitha Mohan
 Chairman,
 Pricol

Trustees
Sri Ravi Sam
 Director,
 LMW Group of Companies

Sri Kanakal Abhaichand
 Partner
 TV & Brothers

Sri N V Nagasubramaniam
 Senior Advocate

Dr R V Ramani
 Managing Trustee,
 Sankara Eye Society

Sri C R Swaminathan
 President
 RAAC

21st Sept 2019

To
Mr. Prakash Muthuswamy
 Managing Partner
 Automation and Maintenance Management Systems (AuM)
 No. 6, Third Floor, Sri Ram Apartments,
 Avinashi Road, Papanaikam Palayam,
 Coimbatore - 37

Dear Sir,

Greetings from Siruthuli!

We would like to express our sincere gratitude towards your support in calibrating the flow of sewage in the Irugur channel. Your technical support has enabled us to have a better understanding to develop a suitable methodology for treatment of wastewater.

It is the magnanimity of people like you that has enabled Siruthuli to make a difference to the environment in Coimbatore region.

While thanking you once again we look forward to your continued support and guidance in carrying our eco message to as many people as possible in the times ahead.

Let's together make Mother Earth smile!

Green Regards,

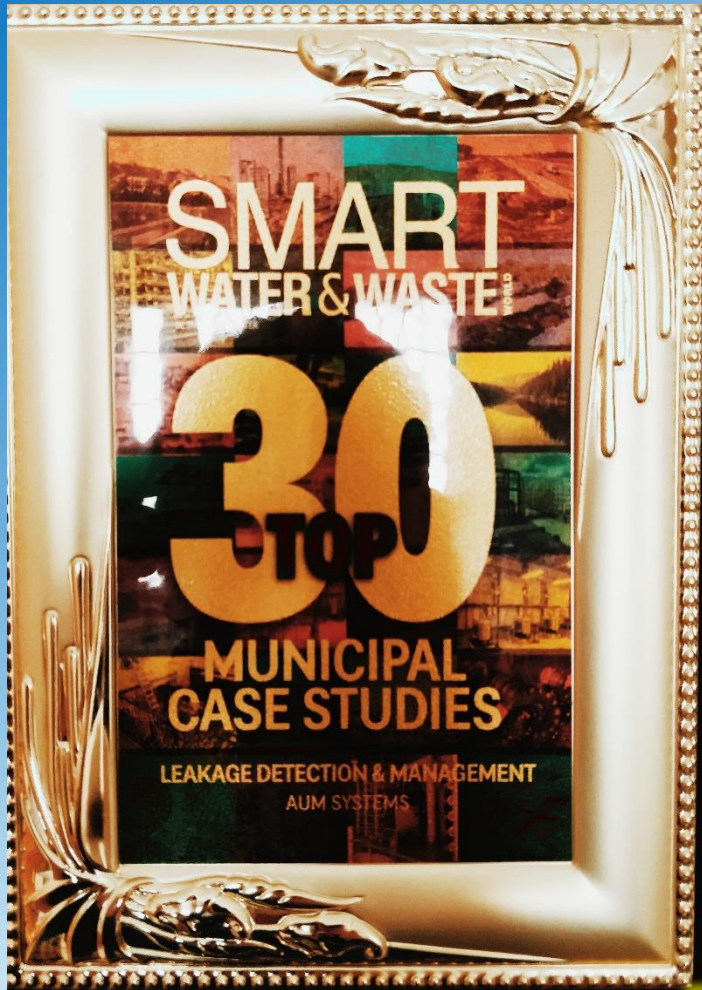
[Signature]
Vanitha Mohan
 Managing Trustee

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WATER CONSERVATION ENHANCING TREE COVER WASTE MANAGEMENT SPREAD THE WORD



AWARDS AND RECOGNITIONS



Our work towards leakage detection and water management was recognized among the Top 30 Municipal Case Studies.

Award Won by AuM Systems

Thank You !

www.aumsystems.com

Contact us:
info@aumsystems.com