

A close-up photograph of water flowing from a metal tap into a clear glass. The water is captured in mid-air, creating a dynamic, bubbly stream. The background is a blurred, light-colored wall, possibly a window or a tiled wall. The overall lighting is bright and clean, emphasizing the clarity of the water.

**SIEMENS**

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## The digital difference

### SITRANS F M MAG 8000 increases water metering revenue

#### **Background**

The municipal corporation of a port city in southern India is responsible for planning, design, construction, implementation, maintenance, operation and management of the water supply to households and industrial facilities throughout the area.

#### **Automation is key**

Until several years ago, the municipal corporation measured industrial water consumption with mechanical turbine flowmeters whose accuracy was no better than

10% of flow rate. These meters left room for a large margin of error and also incurred a great deal of maintenance-related expense due to wear and tear.

Additionally, since corporation representatives were required to visit every facility on a monthly basis to gather usage data from each of the meters manually, bill disbursement was a lengthy process that generally stretched on for at least 20 days.

**Answers for industry.**



Knowing that they were losing a great deal of revenue, the municipal corporation initiated a project to replace their outdated turbine meters with digital flow technology that could be incorporated into an automated data collection and billing system. They had a number of goals in mind:

- Eliminate inaccurate usage data
- Transmit flow rates, totalizer readings and error messages wirelessly to a centralized control room so that operators can easily monitor individual water consumption
- Advance the billing cycle by 30 days via timely distribution of bills
- Reduce the loss of water transported through underground pipes from 50% to 10% by receiving immediate alerts of leakage locations
- Provide customers with the ability to retrieve usage data on demand or at pre-determined time periods from mobile devices

#### The dual power source advantage

The municipal corporation allocated procurement and installation to a local contractor, M/S Vinflow Controls, which considered electromagnetic flowmeters from several different suppliers. Eventually they determined that the SITRANS F M MAG 8000 water meter from Siemens was the best fit. Whereas competing devices are powered only by battery, the MAG 8000 can operate via either battery or mains power – a major advantage since the application would require the use of GSM/GPRS communication, which tends to drain batteries quickly and could potentially result in a costly shutdown.

Nearly 100 MAG 8000 flowmeters were installed in place of the turbine meters at industrial facilities around the city. The

meters connect wirelessly to several SIMATIC S7-200 PLC stations within a control center, which automate the data collection process and display this information in real time. The meters' built-in GSM/GPRS modules also make it possible for customers to access measurement information remotely via SMS or email at any time of the day or night, and for operators to receive automatic alerts whenever programmed alarms are triggered.

#### Higher accuracy, higher revenue

The municipal corporation is reaping the benefits of having installed MAG 8000 water meters throughout the city. Water distribution revenue has increased by 20% annually since the meters measure flow with accuracy of between 0.2 and 0.4% – a marked improvement over the performance of the older turbine meters. At the same time, the corporation is saving a significant amount of money in manpower since no on-site visits are required, and in maintenance given that the MAG 8000 has no moving parts to wear down.

This project has had such a positive impact that it was named a winner of India's prestigious National Urban Water Awards 2011-12 in the category of financial reform. The corporation now plans to introduce additional MAG 8000 meters into household and commercial spaces, which will undoubtedly boost profitability even further in the years to come.