



e-ISSN: 2319-8753 | p-ISSN: 2347-6710

IJRSET

International Journal of Innovative Research in
SCIENCE | ENGINEERING | TECHNOLOGY



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

Volume 13, Special Issue 1, April 2024

ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

Impact Factor: 8.423

9940 572 462

6381 907 438

ijirset@gmail.com

www.ijirset.com

Smart Meter for Water Utilization using IOT

Mr P. Manivannan, Shirisha P, Varshini S

Associate Professor, Department of Electronics and Communication Engineering, Adhiyamaan College of Engineering, Dr.M.G.R. Nagar, Hosur, India

U.G. Student, Department of Electronics and Communication Engineering, Adhiyamaan College of Engineering, Dr.M.G.R. Nagar, Hosur, India

ABSTRACT: A smart water meter is a gadget that is installed in businesses to track how much water is used by the industry. Conserving water is a major concern for numerous sectors. A shared meter is installed, and departments who are being overcharged are given a share of the accumulated consumption amount. There are various solutions to deal with this problem. In order to address this problem, we have suggested a solution in this research that involves using a device to determine the flow rate and volume of water utilized by the industries and sending that information to the cloud for water consumption monitoring.

KEYWORDS: Water flow sensor, Flow rate, Smart water meter, Water consumption.

I. INTRODUCTION

The term "internet of things," or "IOT," refers to a system in which inanimate items can engage in interactive activities and services are made accessible to allow users to communicate with these devices online. Through the exchange of information over the internet, with or without human interaction, it makes devices capable of networking and communicating with one another as well as the surrounding environment. These days, water conservation is a major concern for many businesses. A smart water meter is an internet-capable gadget that detects the quantity of water consumed in a department. The association for the maintenance department should take the lead in informing all staff members about the quantity of water used. In this article, we suggested placing smart water meters in every department inside the industries as a solution to the aforementioned problem.

II. RELATED WORK

An article that Gurung Ram [1] suggested showed how smart metering might help handle the demand difficulties of the modern water delivery approach that smart meters have established. Its main objective was to plan the water infrastructure network as efficiently as possible. In a suggested study, Hauber-Davidson [2] addressed the function of smart water meters, how they operate, and provided real-time data on water usage. He suggested that action be taken in response to the rising cost of water. In order to understand how households used consumption feedback, both with and without smart meters, qualitative research is analysed using the affordance theory put forward by Sarah Darby [3]. Relying on Advanced Metering Infrastructure (AMI), lower-impact energy technologies were replaced. AMI provided options for customer-utility management and domestic energy management.

III. EXISTING SYSTEM

These are the most popular and affordable kind of water flow meters, measuring flow via turbine rotation in shunt, paddle wheel, or propeller designs. The mechanical varieties of water flow meters measure the rate at which water passes through a pipe and rotates a turbine or piston. The water's volumetric flow rate and the blades' rotational speed are proportionate. The drawback of using mechanical water flow meters to measure water is that they might become clogged with bigger particles or dirty water, which increases maintenance expenses. Low water flow conditions also affect the

performance of mechanical water meters.

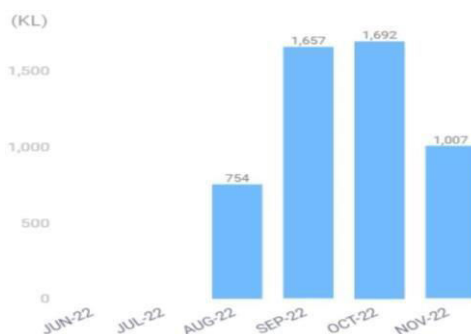
IV. PROPOSED SYSTEM

Internet of things technology is used by smart water meters to establish connections with the end user and the water provider. These meters may be read over cellular networks, and cloud computing software is used to store and manage the data. Households can quickly find and address leaks by using smart water meters, which can detect leaks and unusual trends in water usage. By doing this, water waste would be avoided, and water expenses for homes would decrease.

V. EXPERIMENTAL ANALYSIS

There are numerous cloud systems on the internet that allow customers to monitor the output (flow rate), which is shown graphically, after sending data to the cloud via wi-fi.

MONTHLY USAGE:



DAILY USAGE:



VI. FUTURE SCOPE

Real-time data on water usage from smart meters helps utilities better manage their water resources and minimize water loss in the distribution system. Environmental Monitoring: By offering information on trends of water usage, smart water meters integrated into AMI systems can support environmental monitoring. Real-time data on water usage from smart meters helps utilities better manage their water resources and minimize water loss in the distribution system. Environmental Monitoring: By offering information on trends of water usage, smart water meters integrated into AMI

systems can support environmental monitoring

VII. CONCLUSION

In conclusion, the water level monitoring project for the use of bore water has shown to be a useful tool for efficiently managing water resources. We have effectively ensured regular and dependable monitoring of water levels by putting this system in place, allowing for prompt interventions to stop shortages or overflows. Additionally, because it only needed simple, readily accessible components, it is inexpensive. All things considered, this project has shown to be effective in encouraging water efficiency and enhancing overall resource utilization.

REFERENCES

- [1]. Gurung, Ram, Stewart, Rodney, Beal, Cara, K. Sharma, Ashok” Smart meter enabled water end-use demand data: platform for the enhanced infrastructure planning of contemporary urban water supply networks” Published at Journal of Cleaner Production, 2014.
- [2]. G Hauber-Davidson, E Idris,” Smart Water Metering “, Published at journal of Water, 2006.
- [3]. Sarah Darby,” Smart metering: what potential for householder engagement? “Published at BUILDING RESEARCH & INFORMATION, UK,2010
- [4]. Tracy C. Britton a, Rodney A. Stewart b, *, Kelvin R. O’Halloran c,” Smart metering: enabler for rapid and effective post meter leakage identification and water loss management Tracy” Published at a Journal of Cleaner Production, 2013.
- [5]. Idris, E. “Smart Metering: A Significant Component of Integrated Water Conservation Systems.” In Proceedings of the 1st Australian Young Water Professionals Conference, Sydney, Australia, 2006.
- [6]. Cara D. Beal Rodney, A. Stewart Kelly Fielding “A novel mixed method smart metering approach to reconciling differences between perceived and actual residential end use water consumption” Published at Journal of Cleaner Production,2013,
- [7]. Fernando Arbués, Inmaculada Villanúa, Ramón Barberán,” Household size and residential water demand: an empirical approach” Published at the Australian journal of agriculture and resource economics,2010
- [8]. Rodney A Stewart, Rachele Willis, Damien Giurco, Kriengsak Panuwatwanich & Guillermo Capati, “Webbased knowledge management system: linking smart metering to the future of urban water planning “, Published at journal of Australian planner,2010
- [9]. Graham Cole and Rodney A. Stewart1.” Smart meter enabled disaggregation of urban peak water demand: precursor to effective urban water planning”, Published at Urban Water Journal, 2013.
- [10]. Damien P. Giurco, Stuart B. White and Rodney A. Stewart,” Smart Metering and Water End-Use Data:

BIOGRAPHY



Mr. P. Manivannan, Associate
Professor,
Electronics and Communication
Engineering Department,
Adhiyamaan college of Engineering,
Hosur

International Journal of Innovative Research in Science, Engineering and Technology

An ISO 3297: 2007 Certified Organization

Volume 13, Special Issue 1, April 2024

11th National Conference on Frontiers in Communication & Signal Processing Systems (NCFCSPS '24)

25th - 26th April 2024

Organized by

Department of ECE, Adhiyamaan College of Engineering, Hosur, Tamilnadu, India



Shirisha. P
Electronics and Communication
Engineering Department,
Adhiyamaan college of Engineering,
Hosur



Varshini. S
Electronics and Communication
Engineering Department,
Adhiyamaan college of Engineering,
Hosur



INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

 9940 572 462  6381 907 438  ijirset@gmail.com



www.ijirset.com

Scan to save the contact details