Abstract

Since energy sources are limited and it has become our need to save as much energy as possible. In this scenario, Smart meter comes into the picture. A Smart meter captures unit consumed in a specific time frame, display results and consequently provide real time inputs to the billing unit. The use of such smart meters has been growing rapidly in recent years. In fact, certain market observers estimate the global market for smart meters will accelerate from $4 billion in 2011 to approximately $20 billion in 2018.[1] Direct U.S. exports of smart meters also have shown solid growth in recent years, although from a small base, rising from an estimated $180 million to $240 million during 2008–13[2]. Smart meters are far better than those electromechanical meters used previously by the customers.

In this paper, we are explaining the concept of smart meters, different types of communication, communication employing PLC, security and frauds detection, cost optimization and data sets.

References
1. Lisa Alejandro, Caitlin Blair, Laura Bloodgood, Mahnaz Khan, Martha Lawless, Daniel Meehan, Patrick Schneider, Karl Tsuji “GLOBAL MARKET FOR SMART ELECTRICITY METERS: GOVERNMENT POLICIES DRIVING STRONG GROWTH” June 2014.
4. Silicon Laboratories, Inc. Smart metering brings intelligence and connectivity to utilities, green energy and natural resource management. Rev.1.0. [accessed August, 2013].
5. Lilijana Djukic Petromanjanc, Oliver Momcilovic, Livan Scepanovic “SUGGESTED ARCHITECTURE OF SMART METERING SYSTEM”.
7. Deign J, Salazar CM. Data management and analytics for utilities. FC Business Intelligence Ltd.; 2013.
11. PENG LI (Member, IEEE), SONG GUO (Senior Member, IEEE), AND ZIXUE CHENG (Member, IEEE) "Joint Optimization of Electricity and Communication Cost for Meter Data Collection in Smart Grid" Digital Object Identifier 10.1109/TETC.2013.2273890.
13. Nanlin Jin, Member, IEEE, Peter Flach, Tom Wilcox, Royston Sellman, Joshua Thumim, and Arno Knobbe "Subgroup Discovery in Smart Electricity Meter Data" IEEE TRANSACTIONS ON INDUSTRIAL INFORMATICS, VOL. 10, NO. 2, MAY 2014.

Index Terms

Computer Science Information Sciences
Keywords

IoT, P2P, IRM, Electromechanical, PLC, AMI, MDM.