

Web Based Non Revenue Water Component Identification and Management System

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Abstract

Non-Revenue Water (NRW) is categorised as the amount of water put into the supply systems that bring no revenue to the supply authority. NRW cannot be totally avoided and understanding its components is crucial before a reduction strategy can be developed and implemented.

A comprehensive and flexible web based system has been developed for Felda Chuping NRW water distribution system. Functions that have been built in the system are data recording, NRW estimation and report generation. As the system covers all aspect of water management, the output produced from the system can be used by the management for decision making and planning. Special feature of the system is the identification of the magnitude and source of NRW, which was previously not available through manual operation. This system complies with the NRW definition produced by the International Water Authority.

The prototype was developed based on NRW framework and work procedure for NRW analysis. The framework illustrates the treated water distribution system that consists of the configuration for water source, water storage, water network, and the supply area. All the seven NRW components identified by IWA have been grouped/ clustered into four different sections. The sections are between water source and supply tank, at supply tank, after supply tank up to consumer area, and consumer area. The working procedure includes determining actual system volume input, revenue water and NRW components, data consolidation as well as the source and magnitude of NRW. This procedure is also able to compare NRW obtained from two different approaches. The first approach is the NRW deduced from water production and revenue, while the second is the actual collected NRW data. A mathematical model has also been produced for re-estimation of the source and magnitude of NRW components. This model can be modified according to various situations such as dry or raining sessions.