STRATEGIES TO OVERCOME LEAKAGE IN CLEAN WATER DISTRIBUTION FOR DISTRICT WATER COMPANY OF MENANG, CITY OF MATARAM

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Abstract

Water losses have been a major problem faced by district water companies in Indonesia. This study will elaborate on the technical efforts to optimize the clean water distribution system and reducing the leakage to fulfill the residents' demand on district water company of Menang (PDAM Menang), city of Mataram. Primer data was gathered by real demand survey from 166 respondents and site visit to the detectable leakage location with team from PDAM Menang. While the secondary data was obtained from respectable party such as countyman office, Mataram statistical bureau, and the office of public service department of Mataram city. Analitical data has shown that 47,6% of PDAM Menang subscribers regard the service as good, 48,8% medium, and 2,7% as excellent. Total water usage for Mataram on June 2014 is 913,082,4 m³ with 30,6% losses. On the site visit, it was found that water loss was caused by imperfection in pipe joint seam and weld (11,5%), broken pipe (9,2%), buried pipe under ground (42,4%), and plugged off pipe (36,9%). Is service zones were made up to make the monitoring and handly of water losses of the city of Mataram. It was in line with capacity to cater residents as per 2024 projection along with several technical and service assumptions. Other than that real losses must be handled by detection of losses, maintenance and rehabilitation, also reducing response time to fix any reported water leakage. Apparent losses are to be addressed by decreasing the water meter error, human error, computer error, water thievery, and reducing leakage in distribution system. From financial aspect analysis, the calculated that Rp. 7,542,034,500 investment is needed to execute the implementation of water loss reducing strategies, whereby 23,9% will be taken from new and monthly subscription cost while the other 76,1% from the government. Further calculation shown that Internal Rate of Return (IRR) value is 20,3% and Benefit Cost Ratio (BCR)> 1 which means abovementioned project is feasible. Net Present Value (NPV) also shown positive value that renders the project to be profitable. On the institutional aspect, lackness of personnel quality due to education insufficiency, most of the employee are only high school graduates. In order to improve organizational quality, PDAM must create and make training programs to increase skills and professionalism, a descent recruitment process must also be conducted to reduce technical and non-technical losses, financial aid to conduct such program can be provided by central or provincial government, last but not least is to increase the number of subscriber while at the same time increase service area.

Keywords : Water losses, distribution system, clean water, district water company (PDAM), City of Mataram, leakage, technical aspect, financial aspect, institutional aspect.