

# **Policy Analysis of Water Management in Integrated Industrial City Bekasi Area Using System Dynamics**

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## **Abstract**

In recent centuries, the rate of water consumption has more than doubled and the Industrial population growth rate has continued to increase. As a result, water scarcity has now become one of the main problems that must be faced locally in Indonesia. In particular, Bekasi Regency is the largest industrial city in Indonesia and the largest in Southeast Asia with 11 industrial areas with 7,000 factories that have a very large need for water for industry.

Given such a dilemma, this study aims to develop a dynamic system model to evaluate a water management system in one of the Integrated Industrial City in Bekasi Regency. The focus is on the following two issues: (1) Policies that can be taken to reduce water demand of Integrated Industrial city in Bekasi area; (2) Model simulation the Impact of wastewater recycle to water demand and water supply of Integrated Industrial City Bekasi Regency.

One of the long-term steps and policies to prevent a water crisis that needs to be considered is how to use wastewater from factories or tenants in the industrial area to be recycled into raw water again, so that it can help meet the raw water supply needs for the industrial area. With a dynamic system simulation, it can be proven whether the water management is sensitive to the reuse/recycle of wastewater is important in this study. Simulating a water demand and supply based on Industrial area growing rate Integrated Industrial City in Bekasi Regency also important in this study.

## **Keywords**

Water Management, System Dynamics, Integrated Industrial City, Recycle waste Water, Reuse water

## **Biographies**

**Fazri Azhar Ramdani, S.Si** is postgraduate student in the Department of Industrial Engineering, Faculty of Engineering, the University of Indonesia since 2021, specializing in System Design and Management. He graduated her bachelor's degree in chemistry from Bandung Institute of Technology. He works in Multinational Water treatment Company in Jakarta, specializing chemical & equipment of water treatment technology.

**Dr. Armand Omar Moeis, S.T., MS.C** holds a Ph.D. Degree from Universitas Indonesia with research focus on maritime logistic. He Obtained his master's degree from Delft University of Technology, the Netherlands, majoring in Engineering and Policy Analysis, Prior to his graduate study, Armand gained his bachelor degree from the Industrial Engineering Department, University of Indonesia. Armand also holds positions in several business entities. It helps him to keep up his pace with business and governmental communities.